

THE SCHOOL REVIEW

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Educational News and Editorial Comment

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THE JUNIOR COLLEGE AND THE SMALL HIGH SCHOOL

THE rapid growth of the junior college is increasingly bringing up the question of what can be done to provide education at this level for youth in regions or districts with small high schools. The movement has already seen the establishment in such districts of a number of junior colleges with enrolments so small that one may well question whether the work can be effectively done with the students and the resources available. A recent issue of the *Indiana Teacher* contains, as its leading article, a recommendation that seems to promise partial solution of the problem of providing junior-college education for youth in such districts. The article, written by Donald L. Simon, principal of the Junior-Senior High School in Bloomington, is entitled "The Reorganization of Secondary Education in Indiana." We quote the portions of the article bearing most directly on the problem to which reference has been made.

Indiana is a state of small high schools. The typical secondary school in Indiana is a six-year high school located in a township school corporation. In a large number of the counties a high school has been established in each township of the county. Because of their smallness the offerings in these schools, especially in the upper years, must necessarily be very limited. While the small town-

ship high schools of the state have served to popularize secondary education in the minds of young people, and adults as well, they cannot be expected to provide the range of offerings to be found in the city secondary school with a large pupil population. Is there a way to preserve the township high school and at the same time provide a comprehensive program for the older youth?

Under the plan proposed herewith the program of the township and small town high school would be limited to the first four years of the secondary period. With the elimination of Grades XI and XII these smaller schools could utilize their facilities to better advantage in providing for the youth from ages twelve to sixteen. Upon completion of the first four-year period of training the student would be transferred either to a city high school offering the entire eight-year program of secondary education or to a new four-year institution offering a program suitable for youth from ages sixteen to twenty. During the second four-year period the student would have an opportunity to take either a program terminating at the end of two, three, or four years or one from which he might transfer to a liberal-arts college or university after the second, third, or fourth year. The plan presupposes that with the provision of a program adapted to the needs of older youth the new institution would eventually hold a large proportion of its students for the entire four-year period.

In order for the foregoing plan to operate effectively, certain changes in the present school law seem advisable. To avoid school withdrawal at the close of the first four-year period, the compulsory school age would have to be raised to eighteen years. The organization of larger administrative and attendance units would lead to more co-operation from smaller communities which might object to the transfer of older youth to city and county "colleges" without representation on the governing boards. The retention of a trustee as lay director of the local school has merit and should be considered in any proposal for changing the present administrative organization. Furthermore, the provision of adequate funds for the support of an extended program would call for legislative action. The present trend, however, toward the establishment of a broader tax base seems to point in the direction of a solution to the problem of financial support.

The reorganization movement in Indiana and elsewhere will not be completed with the downward extension of the high school to include Grades VII and VIII. The trend now is definitely in the direction of the upward extension of the same institution to include what might be designated as Grades XIII and XIV. "The People's College" is on its way to Indiana. When shall provision be made for its inception?

CARRYING OUT OUR PROMISE

OUR first issue—that for September—of the school year now nearing its close carried announcement of increased emphasis in the *School Review* on problems of curriculum and instruction. At that time several articles recognizing the emphasis were announced

for early issues, namely, "Current Issues in General Education," "Articulation of Business Subjects in High Schools and Colleges in Illinois," "Seventy-one Courses in Consumption," "Realistic Teaching of Government and How To Get It," "Schedules of Junior High School Pupils," "An Integrative Approach to the Social-cultural Aspects of Language," and "Core-Curriculum Developments in California." All articles promised have been or are being published.

Many other articles in line with the emphasis, on a par in quality with those previously named, have been published during the year, among them, "Remodeling Your Commercial Department," "Effective Enrichment of the Textbook in Foreign Language," "Teacher Assignments versus Workbook Assignments," "Can Teachers Be Trained for New Curriculums?" "Revelations of a Testing Program in Current Affairs," "A Remedial Penmanship Program in a Junior High School," "Evaluating the Leisure Reading of High-School Pupils," "A Specially Adjusted Course in Personal and Social Problems," and "Some Ways To Develop Better Readers in the High School." Comments of our readers bear out the belief that the full list of articles represents a composite of significant contributions to the literature on a wide array of aspects of the problem of curriculum and instruction. The increased emphasis has been achieved without neglecting unduly other vital aspects of secondary-school keeping.

Mention has been made in an earlier issue of the almost universally favorable acceptance of the new dress of the *School Review*.

COURSES IN CONSUMER EDUCATION AND PERSONAL BUSINESS

RECENT issues of *High Points in the Work of the High Schools of New York City* have been carrying descriptions and discussions of courses in consumer education which should prove interesting to teachers and administrators elsewhere. It is not that excellent beginnings along this line have not been made in other cities even before New York instituted them, but rather that the divergent approaches furnish food for thought on the problem. An article in the March number by Etta Miller and Jules Kolodny, of the Samuel J. Tilden High School, takes issue with the scope and the organiza-

tion of courses, previously described in *High Points*, which appear to stress almost exclusively problems in the purchasing of different types of commodities and services. For example, the tentative list of topics for one such course includes "The Purchase of Wearing Apparel," "The Purchase of Food Products," "The Purchase of Drugs," "The Purchase of House Furnishings," "The Purchase of Luxuries," "Principle of Advertising and Retailing," and "The Need for Government Legislation."

Miss Miller and Mr. Kolodny contend that such a course of study implies that "we can teach children to become specialists in all conceivable consumer goods; that this special knowledge can be utilized by them in making their purchases; that as a result the handicaps of the 'industrial and commercial civilization that can outwit him at every turn' will be overcome." They "deny categorically" the possibility of accomplishing in a year all that such a course sets out to accomplish. They urge that a valuable integrated course "must not undertake the impossible" and that it must take cognizance of problems other than those connected with buying goods. What these problems are may be seen in the following outline of a course of study intended for use in the high school in which these two writers are employed. The course consists of eleven units: I. "The General Problem (Standards of Living, Factors Which Condition the Standard of Living, Obstacles to Freedom of Choice for Consumers)"; II. "Wastes in the Consumer's Dollar (Unwise Buying, Misrepresentation, Competitive Wastes, Monopoly, Advertising)"; III. "Budgeting"; IV. "The Movement for Standards"; V. "Eliminating the Middleman's Profit"; VI. "The Government and the Consumer"; VII. "The Consumer and Credit"; VIII. "Housing"; IX. "Life Insurance"; X. "The Consumer's Health (Private Medicine, Group Practice of Medicine, Socialized Medicine)"; XI. "The Consumer and Labor." In this course the attention of the pupil is focused, say its organizers, on the "*major issues* which challenge the consumer and with which he must wrestle in a highly dynamic industrial society."

An article in another issue reports a description by Miss Katherine Kerestesy, of the Franklin K. Lane High School, of a course in "Personal Business." The author insists that the course is "in no

sense one in business practice designed to prepare students to function in a business office, nor is it in any way meant to be a course in consumer education designed to make of the students intelligent purchasers of goods."

The course consists of the following six units: I. "Buying, Paying, and Borrowing To Pay for Purchases"; II. "Renting and Owning a Home"; III. "Providing for Future Security"; IV. "Problems in Relation to Employment"; V. "Problems in Relation to Traveling"; VI. "Budgeting." Comparison of this outline with that being given in the Tilden High School shows that the two courses cover some common ground.

HERE AND THERE AMONG THE HIGH SCHOOLS

FIVE developments in as many secondary schools in widely scattered states are described in the following paragraphs. Four of the developments involve school and community co-operation in significant ways, and the fifth concerns recreation through skating and dancing in a junior high school.

A community survey by Seniors in high school As part of its survey of the Bladensburg (Maryland) High School, of which T. V.

Warthen is principal, the Cooperative Study of Secondary School Standards made a complete survey of the community. The problem of carrying out an inclusive survey project was complicated by the fact that the school serves at least twelve separate communities, ranging in population from less than a hundred to more than a thousand, ranging in type from definitely rural to semi-urban or suburban, and extending over more than fifty square miles of territory. The work was done by pupils in two Senior classes in economic sociology and involved taking the survey schedules to every house in the district. Maps were made locating all houses in the different areas assigned to the pupils. The number of families filling out the schedules was 1,820, and these families were found to contain 7,217 persons. About 200 families declined to fill out the schedules. The questions called for the following types of information: religious preference and church attendance, subscriptions to newspapers and magazines, educational background of par-

ents and other adults, recreational activities, sanitary conditions, ownership of automobiles, membership in clubs and civic organizations, occupations, and the occupational or school status of persons sixteen to twenty-five years of age. Evidence from the survey is being analyzed to help in determining the kind of service that the schools should provide in order to meet community needs.

Pupils promote development of the community D. R. Coombs, principal of the Jordan High School (Lower Division) of Salt Lake City, reports that, although he does not live in the district served by the school, he is a member of the Community Civic Organization and takes an active part in setting its policies. He carries back to the school, especially to the classes in community civics, the problems discussed in committee meetings. The pupils in the classes discuss all the problems and co-operate actively with the adults in efforts to improve the community.

Special classes have, during school time, surveyed the entire community situation, including location of industrial plants, railroads, bus lines, churches, clubs, schools, and libraries. Principal Coombs states that the classes know the location of every house and something of the kinds of homes from which the pupils come. The school and the community co-operate in the annual clean-up campaign, and pupils write letters to citizens suggesting improvements, as well as many letters of approbation to property-owners who make unusual improvements in their homes.

Last year, according to Principal Coombs, the civic club of the school went in a body to the city commission to protest against the evils permitted to exist on the banks of the Jordan River, which flows through the district, and to offer suggestions on what the city might do in the way of improvement. This club has taken an active part in revealing to patrons of the district and other citizens the possibilities of the river as a civic asset instead of a dumping ground. The classes in art select picturesque settings for sketching and photography and have already done much to convince the people generally that "Old Jordan" is ideal for a recreational center. The boating club is building a sturdy boat, which the school plans to equip with a motor. The purpose is to convince the city of the feasibility of using the river as a boating course.

Instruction in carpentry without regular teachers The high school at Washington, Connecticut, of which Raymond A. Lumley is principal, enrolls from ninety to a hundred pupils. In a school of this size it is difficult to arrange for sufficient electives to serve the interests of many pupils in the general curriculum. A number of boys in this curriculum, who were not doing well in their regular subjects, said that they would like to do some carpentry work. A basement room, which was vacant afternoons throughout the school week, was shown to the boys, and they thought that it could be fixed up for their work. From a special fund enough money was obtained to build a workbench and a storage place for lumber. Schedules were then arranged, in the second semester of the current school year, so that the boys could have two periods each afternoon for carpentry. The boys were to select their own projects and to supply tools and lumber. The school volunteered that, whenever the boys were "stuck" on their projects, a carpenter, a citizen of the community, would come in and help them through the difficulty. During a large part of the semester the boys have been at work on scenery for the Senior play. During the work on the set a fireplace was built, and it was necessary for the carpenter to be consulted only once while this piece was being made. At the time of report the scenery had been completed, as well as certain other pieces. The school plans to grant credit toward graduation for the work.

School and community co-operation in religion Willis W. Collins, principal of the junior-senior high school at Idabel, Oklahoma, points out that the teaching of religious subjects or the reading of "daily devotionals" in public schools is prohibited by law in many states. Through community co-operation and acceptance his community has followed, in the entire school system, a definite policy of religious education of a nondenominational character. The high school sponsors a Bible-study club, which is in the third year of successful operation. The essential working idea of the club is the presentation of religious topics by members of the Ministerial Alliance. The following topics are used: "The Books of History," "The Books of Poetry," "The Greater Prophets," "The Lesser Prophets," "The Church and Civilization," and

"The Church and the World-Crisis." One important reason for having the club is that more than half the pupils, boys and girls who must ride in busses from the rural areas within the large district, seldom have opportunities of hearing messages about the Bible from men of talent and religious background. The club is composed of Juniors and Seniors in the high school.

Another feature of the religious program is the systematic course in daily devotional readings, which are selected by subject and topic and which also have grade placement. Each home-room teacher is given a mimeographed list of daily Bible readings for the year and an explanation of the theme.

Skating and dancing in one junior high school In the spring of 1938 the Wilson Junior High School of Muncie, Indiana, of which

John V. Maier is principal, bought forty or more pairs of roller skates usable on the floor of the gymnasium. With these, home-room skating parties are held, at which a fee of five cents an hour is charged each pupil—an amount large enough to keep the skates in repair and to replace damaged or worn-out skates. The gymnasium is scheduled for skating parties by the home-room social committee, and each room is allowed three skating parties a semester. Demonstration skating by pupils and faculty members is sometimes used for entertainment during the noon recess, and correct manners and new ideas for carrying on skating parties are illustrated in this way. Faculty skating parties have also been held.

According to Miss Gladys Reeves, head of the English department, who supplied the description of these items, the opinion held in Wilson Junior High School is that social courtesies and a wholesome interest in the improvement of appearance and manners can be developed through social dancing. The aim has been to give every pupil interested an opportunity to learn to dance. Beginning instruction in dancing is given for a few days of each semester in classes in physical education. Teachers capable of doing so have volunteered to give instruction to small groups at the close of school on one or two evenings each week. Dancing on the gymnasium floor is made available for all pupils during one or two noon periods a week and on one evening from four to five o'clock. Any home room wishing to dance after school may plan to do so if accompanied by

the home-room teacher, and such a group may use the library for the activity, if scheduled in advance. Whenever a home room wishes to have dancing as part of a special after-dinner party, the library may be scheduled for the purpose between the hours of seven and nine. Such occasions are rare, however, for pupil activities after eight are not encouraged.

NORTH DAKOTA'S BOARD OF ADMINISTRATION RECANTS

THE *School Review* twice within the school year reported on the legal controversy between the North Central Association of Colleges and Secondary Schools and the state of North Dakota ("by William Langer, Governor"), in which the United States District Court and the Circuit Court of Appeals successively declined to enjoin the association from removing the North Dakota Agricultural College from its list of accredited institutions. We have received from Frank L. Eversull, new president of the college, a copy of a resolution passed by the Board of Administration of North Dakota (in charge of educational, eleemosynary, and penal institutions), which extends through one more reassuring chapter in the chain of events that began with the disturbing and summary dismissal of seven members of the faculty. The resolution is a step toward making amends to the dismissed members for the wrong that was done them. The outcome of the litigation and the passing of the resolution reflect something of progress in the long and often discouraging struggle for tenure and freedom of teachers and teaching.

The whereases preceding the resolution name the seven persons dismissed by the Board of Administration, admit that these persons were not given "adequate opportunity to present their cases to the board before their dismissal," and state that an audit of the files does "not show adequate reasons" for the dismissals. In the resolution proper the Board of Administration "clears the names of these aforementioned members of the staff" and "recommends to President Frank L. Eversull that he give consideration to these persons, where, in his judgment, they may be employed as openings occur or adjustments made as finances are provided by the Legislative Assembly of North Dakota."

The brief statement from President Eversull in transmitting the

copy of the resolutions does not include reference to the fact that several reappointments of persons dismissed have already been made in accordance with the recommendation in the resolution. Nor is it possible within the limits of space available here to report on factors that greatly facilitated the reversal of position by the Board of Administration, such as the campaign throughout the state of an aroused student body, the election of a new governor, and subsequent important changes in the personnel of the board itself.

A NEW CURRICULUM COMMISSION

A CONFERENCE of delegates of ten national organizations of classroom teachers, representing nearly all the major areas of the elementary- and secondary-school curriculums, was held in Detroit in February. The meeting had been called by invitation of the Committee on the Place of English in American Education of the National Council of Teachers of English, with the approval of the Executive Committee and the Board of Directors, to consider ways in which teachers of the special subjects can co-operate in the planning of the curriculum in general education. Present at the conference were delegates from ten national organizations representing as many special fields of instruction.

It was the unanimous judgment of the delegates that teachers of the various school subjects should undertake a joint study of the curriculum in general education in order to determine (1) ways in which the special subjects can contribute to a modern program in general education and (2) ways in which teachers in the various areas can co-operate in building a curriculum based on the needs of the learner and on the demands of a democratic society.

In order to carry forward this study, the conference decided to organize as the National Commission on Co-operative Curriculum Planning. The objectives of the new commission are twofold: (1) to develop techniques for co-operation among representatives of all the subject fields in the planning of the curriculum and (2) to construct an illustrative curriculum, consisting, wherever possible, of units actually developed by co-operative effort of subject teachers and exemplifying the contributions of the special disciplines to a modern program in general education.

Organizations not now represented will be invited to participate, and technical assistance will be sought from curriculum experts. Organizations in the field of general education will be invited to delegate representatives who will serve as advisory members of the commission.

John J. DeBoer, of the National Council of Teachers of English, was elected chairman of the commission, and Miss Lilly Lindquist, of the National Federation of Modern Language Teachers, was elected secretary-treasurer.

SECOND ANNUAL CONFERENCE ON READING

THE second annual conference on reading for teachers and school officers of elementary schools, high schools, and junior colleges will be held in Mandel Hall, University of Chicago, June 21-24, inclusive. The central theme of the conference is "Taking Inventory of Recent Developments in Reading." Specialists from all parts of the country will present objective and impartial appraisals of current trends in reading. The program on each half-day will be introduced by an address before the conference as a whole. The audience will then divide into sectional groups under expert leadership for intensive discussions of related problems. The general plans for each of the four days are described in the following paragraphs.

On Wednesday, June 21, the various programs of the day will deal with basic or developmental reading problems at all levels—elementary-school, high-school, and junior-college. Special emphasis will be given to the meaning aspects of reading. The evening session will consist in a round-table discussion of challenging problems and controversial issues presented during the day by speakers and members of the audience. Some of the visiting specialists who will participate in the programs of the day are: Bess Goodykoontz, assistant commissioner of education, United States Office of Education; Gertrude Whipple, associate professor of education, Wayne University, Detroit, Michigan; Ethel Mabie Falk, formerly director of the curriculum in the public schools of Madison, Wisconsin; Mary L. Starkey, assistant principal, Sandusky Junior High School, and supervisor of reading, Sandusky, Ohio; Evalyn Bayle, head of English department from 1929 to 1938 at Oberlin High School, Oberlin, Ohio; and Roy Ivan

Johnson, director of the Division of Skills and Techniques, Stephens College, Columbia, Missouri.

Thursday, June 22, the sessions will deal with problems presented by poor readers. Discussions will focus on causes of reading difficulties and on constructive experiments in remedial reading. The evening session will give special consideration to the emotional and the visual difficulties underlying poor reading. Visiting specialists on the program include: Walter F. Dearborn, director of the Psycho-educational Clinic, Harvard University; Paul A. Witty, professor of education, Northwestern University; Louise Farwell Davis, director of research, National College of Education, Evanston, Illinois; Augusta Jameson, psychologist, Institute for Juvenile Research, Chicago, Illinois; Anna C. Orcutt, psychologist, Armour Institute of Technology, Chicago, Illinois; Thelma F. Hicks, adjustment teacher, Amelia Dunne Hookway School, Chicago, Illinois; and Alathena J. Smith, psychologist and case worker in the public schools at Shorewood, Wisconsin.

On Friday, June 23, specialists in different subject fields will consider reading problems in their respective areas. What can teachers of the social studies do, for example, to insure more intelligent interpretation of printed materials in their field? Similar problems will be discussed in all subject-matter areas. The evening program will consist in a round-table discussion of related problems in this field. Among the visiting speakers are: Ernest Horn, professor of education, University of Iowa; Edgar Dale, associate professor of education, Ohio State University; Hannah M. Lindahl, supervisor of elementary education in the public schools at Mishawaka, Indiana; Mary G. Kelty, author and specialist in the social studies (intermediate grades), Chicago, Illinois; and Ethel Kawin, director of guidance in the public schools at Glencoe, Illinois.

The final day of the conference, Saturday, June 24, will be devoted to two problems: (1) cultivation of interests in reading to carry over into life outside the school and (2) how the library may function effectively in promoting desirable reading interests and habits. Among the speakers are: Dora V. Smith, professor of education, University of Minnesota; Edgar Dale, associate professor of education, Ohio State University; Nora E. Beust, specialist in school

libraries, United States Office of Education; and C. Irene Hayner, University of Illinois Library School.

The University extends a cordial invitation to teachers, school officers, and all others who are interested in reading problems to attend the conference. It is open without fee to students registered during the summer quarter. For those not registered a fee of \$5.00 will be charged for the conference period, or \$1.50 a day. For additional information or copies of the program, address William S. Gray, Department of Education, University of Chicago.

CONFERENCE OF ADMINISTRATIVE OFFICERS OF PUBLIC AND PRIVATE SCHOOLS

THE eighth annual conference of administrative officers of public and private schools will be held by the Department of Education of the University of Chicago at Judson Court, College Residence Halls for Men, during the week of July 17-21, 1939. The program in the forenoon will consist of lectures by members of the Department of Education and visiting instructors. Separate round-table discussions for superintendents, high-school principals, and elementary-school principals will be held in the afternoon. Programs of the conference will be mailed to persons applying to Professor William C. Reavis, Department of Education, University of Chicago.

Room and board will be provided, to the extent of the available capacity, in Judson Court for the week, Monday to Friday, for sixteen dollars. Reservations may be made through William J. Mather, Bursar of the University of Chicago.

The conference is open without fee to students registered in the summer quarter and to administrative officers of public and private schools who desire to attend. The general theme of the conference, for which the complete program is given below, is "Democratic Practices in School Administration."

Monday, July 17

PRINCIPLES OF DEMOCRATIC ADMINISTRATION

"Democracy as an Agency of Social Control," Lloyd A. Cook, Associate Professor of Sociology, Ohio State University

"Principles of Democratic Administration," Floyd W. Reeves, Professor of Administration, University of Chicago

"Difficulties Inherent in the Development of Democratic Practices in City School Administration," DeWitt S. Morgan, Superintendent of Schools, Indianapolis, Indiana

Tuesday, July 18

TRAINING PERSONNEL FOR EFFECTIVE PARTICIPATION
IN DEMOCRATIC SCHOOL ADMINISTRATION

"Training Teachers for Effective Participation in Educational Administration," Frank E. Baker, President, State Teachers College, Milwaukee, Wisconsin

"Training Administrative Officers for Democratic Leadership," Ralph W. Tyler, Professor and Chairman of the Department of Education; Chief Examiner, Board of Examinations, University of Chicago

"In-Service Training of Personnel for Effective Participation in City School Administration," C. L. Cushman, Director of the Department of Research and Curriculum, Denver Public Schools; Visiting Professor of Education, University of Chicago (Summer, 1939)

Wednesday, July 19

ORGANIZING A SCHOOL SYSTEM FOR
DEMOCRATIC ADMINISTRATION

"The Legal Basis of Democratic Administration," Newton Edwards, Professor of Education, University of Chicago

"Contributions of Teacher Organizations to Democracy in Administration," Edward E. Keener, Principal, Hay Elementary School, Chicago

"Fundamentals of Democratic Administration in City School Systems," Nelson B. Henry, Associate Professor of Education, University of Chicago

Thursday, July 20

IMPORTANCE OF DEMOCRATIC PRACTICES IN THE INSTRUCTION
AND MANAGEMENT OF PUPILS

"How Much Freedom Should Pupils Be Granted To Choose Their Experiences in Learning?" G. T. Buswell, Professor of Educational Psychology, University of Chicago

"The Effects of Democratic School Practices on the Personality of the Child," Daniel A. Prescott, Professor of Education, University of Chicago

"The Importance of Securing the Participation of Boys in the Reduction of Hazards from Accidents and in the Elimination of Juvenile Crime in Modern Cities," Eliot Ness, Director of Public Safety, Cleveland, Ohio

Friday, July 21

EXAMPLES OF DEMOCRATIC PRACTICES IN
EDUCATIONAL ADMINISTRATION

"Types of Democratic Practices in Public Schools," Carl C. Byerly, Superintendent of Schools, West Chicago, Illinois

"The Teachers' Council in the Oak Park Schools," William J. Hamilton, Superintendent of Schools, Oak Park, Illinois

"Faculty and Pupil Participation in the Administration of an Experimental School," Ernest Horn, Professor of Education; Director, University Elementary School, University of Iowa

WHO'S WHO FOR JUNE

The authors of articles in the current issue PHILIP R. V. CUROE, professor and chairman of the Department of Education at Hunter College of the City of New York.

ROYAL B. EMBREE, JR., instructor and research counselor in the General College of the University of Minnesota; formerly director of guidance in the University High School, University of Minnesota.

JAMES B. SPRAGUE, teacher of mathematics at Bernards High School, Bernardsville, New Jersey. GORDON N. MACKENZIE, principal of the Wisconsin High School, director of practice teaching, and associate professor of education at the University of Wisconsin. HARVEY B. GROCOCK, teacher of English and director of publicity at the Bristol High School, Bristol, Connecticut. FRANCES SWINEFORD, research assistant in the Department of Education at the University of Chicago. KARL J. HOLZINGER, professor of education at the University of Chicago.

The writers of reviews in the current issue JEAN H. ALEXANDER, instructor in education at the University of Minnesota.

ALVIN C. EURICH, professor of education at Stanford University. MABEL E. RUGEN, associate professor of physical education at the University of Michigan. E. R. BRESLICH, associate professor of education at the University of Chicago. IDA T. JACOBS, teacher of English in the Theodore Roosevelt High School, Des Moines, Iowa. HOWARD R. ANDERSON, assistant professor of education at Cornell University; chairman of Junior and Senior High School Social Studies Departments in the public schools of Ithaca, New York, and director of student teaching in co-operation with Cornell University. P. ROY BRAMMELL, head of the Department of Education in Connecticut State College, Storrs, Connecticut.

NEW YORK CITY EXAMINES ITS SECONDARY- SCHOOL CONSCIENCE

PHILIP R. V. CUROE
Hunter College of the City of New York

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HISTORY OF NEW YORK JUNIOR HIGH SCHOOLS

ON MAY 28, 1919, the Board of Education of New York City adopted a resolution to the effect that the schools of the city should be reorganized on the 6-3-3 pattern. This resolution came at a time when the reorganized secondary school was about a decade old in the country as a whole and when it was about half that age in New York City. The first experiment in New York City with a three-year secondary school, spanning the modal chronological ages of twelve to fourteen, inclusive (the seventh, eighth, and ninth years of school life), had taken place in 1915, when three such schools were set up in Manhattan. Like Lochinvar, this mutant on the traditional 8-4 structure had come out of the West: Los Angeles and Berkeley on the Pacific Coast, Grand Rapids and Columbus in the Middle West having done the pioneer work at the opening of the second decade of the century.

The three-year school continued to take hold in New York City between 1915 and 1938, and it received a real impetus after the board's resolution of 1919. While there were only ten such schools in the city in 1916, there were forty-three in 1922. In September, 1938, eighty-one junior high schools were in operation, and others were planned for opening in the near future. The capital outlay budget for 1938 called for the construction of nine more junior high schools at a cost of \$12,460,000.

RECENT APPOINTMENT OF A SURVEY COMMITTEE

Personnel of the committee.—Word now comes that an important committee appointed by the Board of Education of New York City has been assigned to "survey" the city's junior high schools for the

purpose of determining whether the 6-3-3 plan of school organization should be extended, or whether the public schools should revert to the historically older 8-4 organization, or whether some other plan should be followed. This committee is composed of three members of the lay Board of Education (one serving as chairman), of two associate superintendents with expert knowledge gained from supervision of the institutions on trial, of one principal of a four-year high school, of two junior high school principals, of one principal from an elementary school with a kindergarten and eight grades, of a specialist from the United States Office of Education, and of one specialist of the Board of Education.

The personnel of the survey committee has been thus detailed to bring out its representative nature. Nothing less than a committee representative of the various rungs on the American educational ladder could give any hope of seeing the junior high school problem steadily and of seeing it whole. Indeed, it might easily be shown that the point of view of the liberal-arts college should also have been represented on this committee, since the whole question of college-entrance requirements is intimately related to the curriculum of the ninth school year, even though three years of later secondary schooling intervene. It may be, too, that a school-minded representative of organized labor could have contributed to the committee's deliberations.

Problems faced by the committee.—This committee steps into a confused and curious picture. It studies a school situation full of "lag." While the Board of Education in 1919 clearly implied a program limiting elementary education to a six-year span and a secondary education made up of two three-year units (the 6-3-3 organization), inertia has been powerful enough to continue an 8-4 structure in juxtaposition with a 6-3 structure. Differently stated, New York City has continued to build eight-year elementary schools with the terminal year of such schools overlapping the initial year of its junior high schools. More curious still, it has continued to build full four-year high schools, with their initial year overlapping the terminal year of its junior high schools. There does not exist in New York City at this writing even one three-year "senior high school"! All schools at this level, whether general (academic), com-

mercial, or vocational, are full-fledged four-year institutions. This phenomenon has brought the city to the pass where it has had to designate its two types of day secondary schools by this clumsy nomenclature: (1) "day secondary schools—junior high schools"; (2) "day secondary schools—other than junior high schools." Recently, in connection with pending examinations for licenses in its four-year secondary schools, the label "upper secondary schools" seems to have come into use.

An overlapping 8-4 and 6-3 structure in the same community creates difficult problems of articulation, if articulation means "no unnecessary interruption to the continuity of the child's mental, physical, and social growth."¹ It is hoped that the committee confronted with this difficult survey problem will not compromise: that it will recommend either return to the traditional 8-4 structure or unequivocally recommend a universal 6-3-3 structure—unless it can see its way clear to recommending a structure different from either. As things stand now in New York City, there are numerous four-year high schools ("secondary schools—other than junior high schools") which overlap the ninth year of the eighty-one junior high schools, and each year more of these are building.

It seems to the writer that most of these problems of articulation have been marvelously solved when one considers the magnitude of the problems (133,400 boys and girls were enrolled in New York City junior high schools in February, 1938) and their implications for the democratic open road in American education. For example, the New York City structure is such that a child completing the general course in the existing junior high schools moves, without friction, to the second year of the academic course of the existing four-year high schools. Similarly, a child completing the commercial course (A or B) "articulates" smoothly with the second year of the commercial course in the four-year high school, and a pupil completing the industrial course continues with the second year of the industrial course in the four-year high school.

To those interested in open, continuous opportunity for further education of the junior high school pupils, the present New York

¹ Philip W. L. Cox, *The Junior High School and Its Curriculum*, p. 404. New York: Charles Scribner's Sons, 1929.

City setup offers two disturbing elements. One of these is the educational future of the child who has pursued what is called "commercial course C." The other is the educational future of the child who has pursued the two-year course called the "adjustment course." In the first of these courses there is no open sesame to further commercial work in the four-year high school. In the case of the adjustment course there is no next rung on the educational ladder. Both courses lead to the great open spaces of life; neither opens the gate to further systematic public education.

Negative criticism is easy and most often cheap. The point here made is not at all intended to be negative. It is intended to center attention on a factor in the present New York City junior high school structure to which the survey committee, it is hoped, will give serious study.

The adjustment course is, in itself, a real contribution to the education of prepubescent, pubescent, and postpubescent children. Its purpose in New York City is to provide for over-age and other mal-adjusted children in the elementary schools (in the late fifth grade or above) an opportunity to participate shoulder to shoulder with others of their own chronological ages (and of other and more significant ages) in educative experiences suited to their needs and interests. However, as the regulations now stand, the adjustment course is a two-year course; after that—what? There is, as stated above, no entree to further opportunity in the four-year high schools, not even in the industrial course of these high schools. The adjustment course ends in a cul-de-sac. It is hoped that the survey committee will study the situation to see what can be done, if anything, to remove this dead end. Difficult problems of articulation congeal around these adjustment-course children, but educators who would keep the junior high school program thoroughly democratic will work for the thawing of those problems.

With further reference to the importance of keeping the junior high school a democratic open road for continued education, the opinion of a labor group, expressed in 1921, may be worth restating. It stated that the junior high school was inspired by the purpose of stopping the cultural education of workers' children at the sixth grade and of forcing them to specialize in trade education, thus

transforming the schools into "breeding centers of docile wage slaves."¹ Intemperate this labor resolution may be, but it challenges attention, I think, to the educational open-road policy and to the difference between vocational and exploratory experiences at the junior high school level.

FOUR-POINT PROGRAM OF JUNIOR HIGH SCHOOL PRINCIPALS

Those closest to the junior school development in New York City, the junior high school principals,² since their first articulate expression in 1931, have reiterated what may be called a four-point program. It is hoped that the appointed committee, when surveying the institution, will take this program into account. The planks are as follows: (1) the removal of the handicaps under which the existing junior high schools are laboring, one of which is the excessive pupil load carried by teachers in a school theoretically supposed to be child-centered and exploratory; (2) elimination of the seventh and eighth years of the remaining eight-year schools and of the first year of the four-year high schools; (3) a system of expert "horizontal" and central supervision, without the local (geographical) supervision now existing;³ (4) the housing of every junior high school in an especially constructed or reconstructed building, suited to the accomplishment of the aims of junior high school education.

When this reiterated program of the men and women who are laboring in the junior high school vineyard is examined, an important consideration obtrudes, to which, it is hoped, the survey committee will give attention, namely, the recommendation that, if the junior high school is to be justified at all in a 6-3-3 structure, it must house and direct the development of *all* children in the seventh, eighth, and ninth years of school life. It cannot continue to

¹ *Official Proceedings of the Fifty-eighth Annual Convention*, p. 115. Utica, New York: New York State Federation of Labor, 1921.

² These men and women speak in the *Proceedings of the City Wide Conference on Junior High Schools*. The proceedings for the years 1931-37 are in print and are available from the Junior High School Principals Association, 500 Park Avenue, New York City.

³ Probably few smaller communities have faced this problem. New York City's school system, because of its magnitude, has developed a *district* supervision as well as a *central* supervision. The two have come to overlap in the case of junior high schools. This plank in the program of the city's junior high school leaders is a plea for unitary, expertly informed, central supervision.

overlap eight-year elementary schools on the one hand and four-year "secondary schools—other than junior high schools" on the other. In 1936 the editor of the *Proceedings of the City Wide Conference on Junior High Schools* estimated that at the rate of reorganization then existing it would require three decades before the eight-year elementary school would be entirely replaced by the six-year elementary school in New York City. More recently (February 6, 1938) a responsible supervising official prophesied that the eight-year elementary school will almost have disappeared in New York City in one decade. The rate of growth of junior high schools between these dated forecasts has, it is true, accelerated. When the first was made, there were seventy-five junior high schools in the city; when the second was made, there were eighty-one. This annual increment, for the two years, of three such institutions a year compares favorably with the annual increment since 1915, when the first three-year secondary schools were inaugurated. This increment, for the twenty-three-year stretch, has been about three and one-half a year.

This recommendation of junior high school leaders in New York City has another side. Adoption of the recommendation would bring it to pass that *all* "high schools" would be required to eliminate the first year of the four-year structure; in other words, it would set up *senior high schools* as these are known in other parts of the United States.

PROPOSALS FOR CONSIDERATION OF THE COMMITTEE

At the risk of being considered presumptuous, this writer makes the following observations and suggestions. They are based on a quarter-century of study and observation of the gigantic educational system of New York City and on intimate study of the junior high school in the United States, as well as on familiarity with the roughly cognate provisions for education of the prepubescent, pubescent, and postpubescent groups in England, France, and Germany.

1. The reorganization of the American educational structure (the 8-4-4), foreshadowed in the late nineties of the past century, developed many variations (notably the 6-6-4, not alone the 6-3-3). Some of these were not only variations; they were true mutants and

have survived. There is no factual reason why the New York City survey committee should regard the 6-3-3 structure as sacrosanct because of its survival strength.

It is interesting, apropos of this observation, to note that the California city of Pasadena (the first 6-3-3 stirrings came from California) passed through the 6-3-3 period of evolution and by 1935 had attained a structure which might be called 4-4-4-4. The course of the evolution is shown in Figure 1. This chart reveals that

Age	Grade	1890	1900	1910	1920	1930	1935
19	14				Junior College	Junior College	
18	13				Junior College	Junior College	
17	12			High School	High School	Senior High School	Junior College
16	11	High School	High School	High School	High School	Senior High School	
15	10			High School	High School	Senior High School	
14	9			Junior High School	Junior High School	Junior High School	High School
13	8						
12	7						
11	6	Elementary	Elementary	Elementary	Elementary	Elementary	Elementary
10	5						
9	4						
8	3						
7	2						
6	1						
5	K-1st	8-4	K-1st	K-1st	K-1st	K-1st	Primary
4	4-4-4-4		K-8-4	K-6-3-3	R-6-3-3-2	K-6-4-4	4-4-4-4

FIG. 1.—Evolution of the organization of Pasadena, California, public schools from 1890-1935. (Reproduced, by permission of the publisher, from Fred Engelhardt and Alfred Victor Overn, *Secondary Education*, p. 8. New York: D. Appleton-Century Co., Inc., 1937. Adapted from *The Articulation of the Units of American Education*, p. 227. Seventh Yearbook of the Department of Superintendence, 1929.)

at least one community reorganized its traditional 8-4 structure, evolved to the 6-3-3 structure, and kept evolving. Without the history of education as an anchor to windward, there is danger always that the latest variant is taken to be the end of the evolutionary process. Since the New York City survey committee includes men and women who know this history, there is hope that the choice lies not only between 8-4 and 6-3-3 structures, but rather between these and other possibilities.

2. In recent years there has been a growing consciousness of its own identity on the part of the New York City junior high school. Much evidence could be cited in support of this proposition, even if the statements of the official spokesmen of the junior high school in New York City were not in print. There is, for example, the drive for separate junior high school buildings to replace joint housing in elementary-school buildings. There is the development of separate junior high school professional associations, such as that of the Junior High School Principals, whose *Proceedings* of meetings held annually since 1931 present the best epitome of junior high school opinion and practice to be found anywhere. There is the promulgation by the Board of Examiners of New York City of the separate requirements for junior high school licenses, different, on the one hand, from the requirements for elementary schools and different, on the other hand, from those for "day secondary schools—other than junior high schools." This growing consciousness of its own identity must be reckoned with by any survey committee aiming to study the situation *as it is*.

3. A disparagement of the junior high school experience—and product—exists in the reactions of many teachers in the four-year high schools of New York City. It is one of the duties of the writer to supervise student teachers from Hunter College assigned to the four-year high schools of the city. Frequently, when the work of a class is not so creditable as the regular teacher had expected it to be, the explanation is given that "so many of the pupils have come from junior high schools." Sometimes the dullards from junior high schools are asked to stand for public branding. What seems to be needed, if the smooth progress of the children is to be achieved, is a better camaraderie between the secondary teachers at the two levels. This spirit is perhaps best to be achieved by conferences and intervisitation, not by dictation (either of curriculum or of method) from the upper high school fraternity. It may be that the salary differential is a causative factor in the existing attitude of disparagement; or the larger number of semester hours of approved graduate study posited for upper high school teachers; or the absence of department chairmen in the junior high schools, who can make their educational philosophy articulate; or other elements. Let us hope

that the excellent committee which has been working on the junior high school problem will go to the root of this "holier than thou" attitude and will recommend some cures for it and preventives against its continuance.

The committee which is now conducting the survey of the junior high school situation in New York City has a huge job on its hands. Its recommendations will affect hundreds of thousands of children and a veritable army of well-equipped secondary-school teachers and supervisors. What it recommends will have repercussions on state and city eligibility requirements for secondary-school licenses, even now in process of reformulation. By further impact, its recommendations will influence the colleges and the teacher-training institutions throughout the metropolitan district—and beyond. What an opportunity for creative educational planning! What a heavy responsibility!

All students of secondary education await the report of this important committee with great interest.

THE CUMULATIVE-RECORD CARD AS AN AID TO RESEARCH

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THE value of a cumulative-record system to the guidance program can hardly be questioned, and nearly all institutions with organized guidance facilities maintain some such device. Justifiably, these record systems are planned primarily for their utility in pupil guidance. However, the records can also be of great value in research work, particularly if they include a central form for the collection and the tabulation of most pertinent data of objective or semi-objective nature. The present article deals with a cumulative-record card which, although it was developed for guidance purposes, was still constructed in its permanent form with a view toward the possibility of use in research.

It should be pointed out here that the writer does not consider research a justifiable objective of the usual secondary-school guidance program. The guidance department should be almost wholly concerned with its effort to promote the maximal adjustment of each pupil, and prolonged investigations, when they are needed, ought to be handled by a research bureau. The guidance department, however, can maintain records that will be of great value to research, in which it must always be interested whether or not it actually carries out the studies. From time to time, also, it is necessary for guidance workers to make specific investigations, sometimes called "service studies," which are requisite to the functioning of the guidance program. A record system designed to facilitate research can save much time and effort in these instances.

The record system described here is that which was developed by the guidance department of University High School, University of Minnesota. The only feature which will be discussed is the cumulative-record card. A full description of the technical aspects of this

Name: <u>Jones, Mary Anne</u>		Home Address: <u>231 11th Avenue, S.E., Minneapolis</u>		Dr: <u>7301</u> Date of Entrance: <u>Sept. 1933</u>	
Cumulative Personnel Record		ASSISCE		7- <u>6</u> 4- <u>18</u> 22- <u>22</u>	
				9 CHC: <u>0.92</u> Fed. S.H.S.R.P. <u>1.14</u> Dip. <u>0.96</u>	
				X Score: <u>142</u> Chances of Exceeding 63: <u>1/5</u>	
				Brooklyn: <u>1-18</u>	
				10-15: <u>11-6</u> 12- <u>4</u> Total: <u>25</u>	
				16-18: <u>1-18</u>	
				19-21: <u>1-18</u> 22- <u>22</u>	
				23-25: <u>1-18</u> 26- <u>22</u>	
				27-29: <u>1-18</u> 30- <u>22</u>	
				31-33: <u>1-18</u> 34- <u>22</u>	
				35-37: <u>1-18</u> 38- <u>22</u>	
				39-41: <u>1-18</u> 42- <u>22</u>	
				43-45: <u>1-18</u> 46- <u>22</u>	
				47-49: <u>1-18</u> 50- <u>22</u>	
				51-53: <u>1-18</u> 54- <u>22</u>	
				55-57: <u>1-18</u> 58- <u>22</u>	
				59-61: <u>1-18</u> 62- <u>22</u>	
				63-65: <u>1-18</u> 66- <u>22</u>	
				67-69: <u>1-18</u> 70- <u>22</u>	
				71-73: <u>1-18</u> 74- <u>22</u>	
				75-77: <u>1-18</u> 78- <u>22</u>	
				79-81: <u>1-18</u> 82- <u>22</u>	
				83-85: <u>1-18</u> 86- <u>22</u>	
				87-89: <u>1-18</u> 90- <u>22</u>	
				91-93: <u>1-18</u> 94- <u>22</u>	
				95-97: <u>1-18</u> 98- <u>22</u>	
				99-101: <u>1-18</u> 102- <u>22</u>	
				103-105: <u>1-18</u> 106- <u>22</u>	
				107-109: <u>1-18</u> 110- <u>22</u>	
				111-113: <u>1-18</u> 114- <u>22</u>	
				115-117: <u>1-18</u> 118- <u>22</u>	
				119-121: <u>1-18</u> 122- <u>22</u>	
				123-125: <u>1-18</u> 126- <u>22</u>	
				127-129: <u>1-18</u> 130- <u>22</u>	
				131-133: <u>1-18</u> 134- <u>22</u>	
				135-137: <u>1-18</u> 138- <u>22</u>	
				139-141: <u>1-18</u> 142- <u>22</u>	
				143-145: <u>1-18</u> 146- <u>22</u>	
				147-149: <u>1-18</u> 150- <u>22</u>	
				151-153: <u>1-18</u> 154- <u>22</u>	
				155-157: <u>1-18</u> 158- <u>22</u>	
				159-161: <u>1-18</u> 162- <u>22</u>	
				163-165: <u>1-18</u> 166- <u>22</u>	
				167-169: <u>1-18</u> 170- <u>22</u>	
				171-173: <u>1-18</u> 174- <u>22</u>	
				175-177: <u>1-18</u> 178- <u>22</u>	
				179-181: <u>1-18</u> 182- <u>22</u>	
				183-185: <u>1-18</u> 186- <u>22</u>	
				187-189: <u>1-18</u> 190- <u>22</u>	
				191-193: <u>1-18</u> 194- <u>22</u>	
				195-197: <u>1-18</u> 198- <u>22</u>	
				199-201: <u>1-18</u> 202- <u>22</u>	
				203-205: <u>1-18</u> 206- <u>22</u>	
				207-209: <u>1-18</u> 210- <u>22</u>	
				211-213: <u>1-18</u> 214- <u>22</u>	
				215-217: <u>1-18</u> 218- <u>22</u>	
				219-221: <u>1-18</u> 222- <u>22</u>	
				223-225: <u>1-18</u> 226- <u>22</u>	
				227-229: <u>1-18</u> 230- <u>22</u>	
				231-233: <u>1-18</u> 234- <u>22</u>	
				235-237: <u>1-18</u> 238- <u>22</u>	
				239-241: <u>1-18</u> 242- <u>22</u>	
				243-245: <u>1-18</u> 246- <u>22</u>	
				247-249: <u>1-18</u> 250- <u>22</u>	
				251-253: <u>1-18</u> 254- <u>22</u>	

FIG. 2.—Reproduction of the back of the printed cumulative-record card used at University High School, University of Minnesota.

device has already been presented in the *School Review*.¹ A great deal of information is collected in every folder, and no attempt is made to transcribe all of it to the card, which is sufficiently restricted in scope to permit complete utilization. In many types of research it would be necessary to go beyond the record card, particularly in the case of data regarding the changing interests and the extra-curriculum activities of pupils. However, the card holds most of the objective information which would be used time and again in all types of investigations, and it is this form which can easily be adapted to research needs.

A reproduction of the front of the printed cumulative-record card now used at University High School appears in Figure 1. The back of the same card is shown in Figure 2. The card has been filled in for a hypothetical case. The profile is based on standard-score equivalents of the school marks shown in Figure 2. The first four columns in Figure 1 include standard-score values of scores on the New Stanford Achievement Test at Grades VII, VIII, and IX, and of the intelligence quotient. The figures appearing in the original article dealing with this card represented parts of the experimental mimeographed card which was used at the school during the session 1936-37. The principal features of the system proved themselves during the year's trial, and they remain unchanged. As was anticipated, certain minor defects and deficiencies appeared during use. These were corrected in the printed form. Guidance workers recognize the dangerous possibility that a printed form, because of expense and seeming permanence, may tend to prevent further progress. This risk could be discounted at University High School because a large number of the cards were needed and printing furnished no great problem. In many schools the permanent form might more profitably be mimeographed.

The record card has established its value to guidance during the two years of use. Annual checks have shown that it has not been necessary to adjust the norms on which the achievement profile is based, and the card has proved effective in work with pupils,

¹ Royal B. Embree, Jr., "A Cumulative-Record System Based on Permanent Standard Scores for Intelligence Quotient and Achievement," *School Review*, XLV (June, 1937), 438-46.

parents, and teachers. It constitutes the central feature of a separate record system developed for student teachers at University High School.

The card will be of value to research because it contains in readily accessible form a large amount of frequently needed data and because it has been coded for the Hollerith machines. This latter adaptation is not important for brief studies. However, it is certain that such coding of information will be helpful in all investigations involving large numbers of cases. An example will illustrate the point. A follow-up investigation of nearly a thousand University High School graduates is being completed at present, after a great deal of effort and a large amount of clerical service. The same type of investigation, if undertaken ten years from now, will be vastly simplified by the fact that complete cumulative-record cards have been made for pupils now graduating.

The card contains as many types of data as the clerical service of the guidance department could place on it. Not all this information has been coded, and there is room for many more entries on a standard Hollerith card of eighty columns. The front of the record card is useful primarily for pupil guidance, but it holds certain information of definite value to research. The back of the card includes a record of school achievement, test results, and a number of personal details. Data on the schools attended and on family background have been coded. Parents' ages are listed as of the year of the child's birth, while siblings are listed by ages at the date of the child's entrance to the school. Provision is made for the entry of test scores and of some information concerning predicted success and graduation.

School achievement is recorded by quarters for all work and also by subject-matter fields for Grades IX through XII. Honor-point ratios for subject-matter fields are based only on the three senior high school years. These measures are helpful to intraschool investigations of the service type, for the various honor-point ratios either are immediately available or are readily calculable at any time. (This ratio is secured by dividing honor points by credit points, with the following values assigned to marks: A = 3, B = 2, C = 1, D = 0, F = -1.) Most of these measures of academic achievement are

coded for machine work. The record card has already proved its value in connection with such routine projects as the determination of class rank and in several studies involving the prediction of success in upper high school years and in various subjects.

In conclusion, it should be pointed out that the selection of items for inclusion on the card is open to debate. Certain essential data have undoubtedly been omitted in favor of less important material. Furthermore, the card is built around the particular characteristics of University High School, and it is, therefore, not likely to be adequate for other settings without adaptation. However, it has been of definite value to both guidance and research activity. The writer believes that its greatest research value lies in the fact that it will vastly simplify the progressive follow-up investigations which are necessary to the careful evaluation of an educational program.

DIAGNOSTIC TESTING TO IMPROVE MATHEMATICAL ABILITY IN GRADE X

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RECENT studies indicate that measurement has assumed an important place in the educational program and that it now has a variety of uses. The use of tests for diagnosis is a comparatively recent development.

Tests are an important tool which the teacher may use to find wherein her teaching has been effective, wherein are weaknesses of individual students, and wherein the achievements of her classes equal or fall below those of other classes. Some of the learning difficulties of individuals may be revealed through the use of standardized tests. However, many of the difficulties can only be revealed through carefully constructed tests made by the teacher to cover those difficulties.¹

OBJECTIVES OF THIS STUDY

The main objective of the experiment described in this report was to determine the value of teacher-made diagnostic tests in planning remedial instruction for improvement of the mathematical ability of tenth-grade pupils. Tests were devised for certain minute skills and also for relatively large units of subject matter. The results were analyzed to determine class and individual difficulties, and remedial instruction was planned on the basis of this analysis.

Traxler suggests four possible uses of test results by teachers:

1. Discovering the educational abilities of the pupils and adapting instruction to their individual levels of ability.
2. Knowing intimately and fully the cumulative achievement status of each pupil and guiding him in the optimum development of all his powers.
3. Discovering the exceptionally bright or high-achieving pupils and making special provision for them.

¹ J. Murray Lee, assisted by Dorris May Lee, *A Guide to Measurement in Secondary Schools*, p. 7. New York: D. Appleton-Century Co., Inc., 1936.

4. Diagnosing individual pupil weaknesses and disabilities in the different subjects and giving remedial treatment based on the diagnosis.¹

The use of results in this experiment was limited mainly to the fourth purpose listed, although the other uses were also employed to some extent. Special provision for high-achieving pupils is one of the writer's constant objectives, and throughout the experiment a large amount of optional work was presented to the high-scoring pupils of the experimental group, who were excused from most of the remedial work.

INITIAL TEST

Traxler states that "it is sometimes possible for an instructor to make an educational diagnosis with some degree of success without using any measuring instruments whatsoever, just as it is possible for a physician occasionally to diagnose correctly the ills of a patient without utilizing any of the instruments peculiar to his profession. However, diagnostic work is unquestionably much more accurate when its basis includes objective data. Therefore, the first step in diagnosis is to give a suitable test to all the pupils."²

A description of the test selected says in part:

The Rogers Test of Mathematical Ability consists of six tests: (1) Geometry Test; (2) Algebraic Computation Test (Test 1 and Test 2); (3) Interpolation Test (Test 1 and Test 2); (4) Superposition Test (Test 1 and Test 2); (5) Trabue Language Scales (L and J); (6) Mixed Relations Test. . . .

Although designed in the first instance for pupils in the ninth school year, these tests have a wider utility. They have been usefully applied in the eighth grade and in the second year of the traditional four-year high school.³

The test was administered to all tenth-grade pupils in September, 1937, two forty-minute periods being required. The results were immediately used for the selection of experimental and control groups and, insofar as possible, for the diagnosis of the more general difficulties of both.

¹ Arthur E. Traxler, *The Use of Test Results in Diagnosis and Instruction in the Tool Subjects*, pp. 4-5. Educational Records Bulletin No. 18. New York: Educational Records Bureau, 1936.

² *Ibid.*, p. 10.

³ *Rogers Test of Mathematical Ability, Manual of Directions*, pp. 3-4. Teachers College Bulletin, Fourteenth Series, No. 10. New York: Teachers College, Columbia University, 1923.

Much remedial teaching was based directly on the results of the initial test. Furthermore, the test papers were kept on file, together with notations of the difficulties appearing in each, as an aid in the diagnosis of individual weaknesses.

TEACHER-MADE TESTS

As a next step in the experiment, ten teacher-made tests were devised for the diagnosis of specific disabilities. In constructing these tests, the experimenter kept in mind the fundamental difficulties already discovered, as well as the measurement of ability to perform specific unit skills and techniques. The tests measured: (1) ability to draw conclusions from given data, (2) skill in fundamental operations with algebraic numbers, (3) use of formulas in the solution of problems, (4) ability in fundamental geometric constructions, (5) knowledge of loci, (6) ability to demonstrate proof, (7) skill in solution of equations in one unknown, (8) skill in solution of linear systems in two unknowns, (9) geometric vocabulary, and (10) knowledge of fundamental geometric concepts. These tests were given to all pupils in the experimental group, and the results were used to formulate a program of group and individual remedial work.

The following test is presented as a sample of the type used. It is cyclic in that the fundamental constructions involved appear in Part I and the following questions call for the same constructions in the same order.

TEST ON FUNDAMENTAL GEOMETRIC CONSTRUCTIONS

PART I

1. Draw an angle and bisect it.
2. Erect a perpendicular to a given line at a given point in the line.
3. Construct an angle equal to a given angle.

PART II

1. Construct an angle of 45 degrees.
2. Drop a perpendicular to a given line from a given point outside the line.
3. Construct a line parallel to a given line through a given point outside the line.

PART III

1. Construct an angle of 30 degrees.
2. Construct the perpendicular bisector of a given line segment.
3. Construct a triangle, given two sides and the included angle.

PART IV

1. Construct an angle of 7 degrees 30 minutes.
2. Draw a scalene triangle and construct one of its altitudes.
3. Construct a triangle, given two sides and the angle opposite one of the given sides.

DIAGNOSIS AND REMEDIAL TEACHING

According to Ruch and Stoddard, "No tabulation of individual errors should be required in order to arrive at a diagnosis."¹ However, it was felt that the tabulation shown below would prove

TABULATION OF ERRORS
TEST ON GEOMETRIC CONSTRUCTION

PUPIL	PART I			PART II			PART III			PART IV		
	Question 1	Question 2	Question 3	Question 1	Question 2	Question 3	Question 1	Question 2	Question 3	Question 1	Question 2	Question 3
A.						X						
B.									X			X
C.												
D.						X				X		
E.						X	X			X		
F.							X	X		X		
G.									X		X	X
H.						X					X	
I.					X				X		X	X
J.							X			X		X
K.						X			X			X
L.		X	X				X		X	X	X	X
M.			X	X		X						X
N.										X	X	X
O.							X			X	X	X
P.		X			X	X	X		X	X	X	X
Q.		X									X	
R.	X		X	X		X	X			X		X
S.			X			X	X		X	X		X
T.						X	X			X	X	X
Total.	1	3	4	2	2	11	9	1	8	12	9	12

useful. The method utilized is one recommended by Breslich² and is similar to schemes approved by several authorities on diagnostic testing in mathematics. This tabulation suggests remedial work and identifies pupils who may be exempted from further instruction in

¹ G. M. Ruch and George D. Stoddard, *Tests and Measurements in High School Instruction*, p. 19. Yonkers-on-Hudson, New York: World Book Co., 1927.

² Ernst R. Breslich, *The Technique of Teaching Secondary-School Mathematics*, p. 169. Chicago: University of Chicago Press, 1930.

a particular unit. The totals at the bottom show which items require group remedial instruction. A horizontal reading reveals the items not understood by individuals and identifies pupils who need further instruction on material not retaught to the group.

As a result of the analysis, approximately twenty minutes from a regular class period were devoted to remedial instruction of the experimental group. A second test was then given to determine which pupils needed further attention, and an average period of fifteen minutes each was devoted to these individuals. Part of the individual instruction was given in regular class periods during the time allotted to supervised study, but the major portion was done in extra time. Remedial teaching was continued until complete mastery of the material was shown by a final achievement test. The final test was taken at the convenience of the pupil and did not require any of the teacher's time beyond the necessary checking.

The control group was given the usual unit-achievement tests and the customary amount of remedial instruction based on the results. No individual remedial instruction was given, except by request, to members of this group outside the regular class periods.

SPECIFIC EXAMPLE

As an illustration of the attempted diagnosis of individual difficulties and the consequent remedial teaching, consider the case of a pupil who answered correctly the first question in each of Parts I, II, and III of the test on fundamental geometric constructions but failed to offer any solution to the corresponding question in Part IV. Analysis showed that the fundamental difficulty was probably the failure to recognize numerical relationships. Since the correct answers to the first three parts showed that the concept of angle bisection was understood, the specific difficulty seemed to be failure to recognize the fact that seven degrees thirty minutes is one-half of fifteen degrees, which in turn is one-half of thirty degrees.

In the remedial teaching the pupil was asked to report for an individual conference at a definite time and place. The time available for each pupil had been previously noted on index cards. On reporting, the pupil was first directed to examine his answers to Question 1, Part II, and to Question 1, Part III. He was then asked, "On what basic construction do both problems depend?" When the

correct answer, "Bisecting an angle," was given, the pupil was asked what steps were followed in the solution of Question 1, Part III. Two steps were named: "Draw an angle of 60 degrees and bisect it." The pupil was then told that the solution to Question 1, Part IV, depends on the fundamental construction common to the others, and he was asked to state it once more. Next, the pupil was told to explain the meaning of the word "bisect." His answer was, "To cut in half." "Seven degrees and thirty minutes is half of what number?" asked the teacher. "Fifteen degrees," was the response. "Fifteen degrees is half of what number?" was the next question. "Thirty degrees," was the reply. The pupil was then told to construct the required angle by the method of bisection, and he did so in a satisfactory manner.

For further drill the construction of an angle of twenty-two degrees fifteen minutes was assigned, the work to be handed to the teacher at the beginning of the next class period. At that time this pupil and several others who had similar difficulty were given a five-minute test while other members of the class were doing a problem based on the advance assignment. In this case no further remedial teaching was necessary.

RESULTS

Approximately four months after the initial administration, the Rogers test was given again, and results were analyzed for purposes of comparison, as shown in Table 1. The scores show beyond doubt that a marked difference existed between the two groups at the time of the final test. For example, the difference between the median scores was 100 for the final test compared with only 8.3 for the pretest. Furthermore, there were six scores in the upper three intervals for the experimental group in comparison with four for the control group, and the experimental group had only eleven scores in the lower three intervals while the control group had fourteen.

The scores of the experimental group in the Algebraic Computation Test indicated exceptional improvement, while those of the control group showed approximately the amount of improvement to be normally expected. There is little doubt that this difference is due to the remedial teaching. The only instruction in algebraic com-

putation given to the control group was that incidental to the teaching of plane geometry. Both groups showed approximately the same amount of improvement in the Geometry Test. This result seems natural in view of the fact that demonstrative geometry is the subject matter taught in Grade X. The lower half of the experimental group showed greater improvement than the lower half of the control group in both the Interpolation Test and the Trabue Language Scales. Consistent effort was made throughout the experimental

TABLE 1
DISTRIBUTION OF SCORES OF CONTROL AND EXPERIMENTAL
GROUPS ON ROGERS TEST OF MATHEMATICAL ABILITY

SCORE	CONTROL GROUP		EXPERIMENTAL GROUP	
	Pretest	Final Test	Pretest	Final Test
900-999.....				1
800-899.....		2		1
700-799.....	2	2	2	4
600-699.....	2	2	2	3
500-599.....	3	3	4	4
400-499.....	4	4	3	4
300-399.....	7	7	5	3
200-299.....	2		4	
Range.....	285-747	330-856	285-751	339-960
Median.....	425.0	475.0	433.3	575.0

period to improve ability to recognize numerical relationships and to overcome the language difficulties of the experimental group.

CONCLUSIONS

On the basis of the comparison described, the writer considers it possible to formulate certain valid conclusions.

1. From an administrative point of view, diagnostic testing is valuable because it makes possible the rapid discovery of specific individual and group difficulties. It must be borne in mind, however, that "test results are valuable in the degree to which constructive use is made of them." Moreover, "the real cause of a disability may be far removed from the disability as revealed by a test."¹

¹ Arthur E. Traxler, *op. cit.*, pp. 6, 9.

2. Pupils whose ratings in the initial standardized test are approximately what the teachers would expect from previous records will, in most cases, make satisfactory progress in a given tool subject without remedial teaching. However, this statement does not mean that remedial teaching based on the results of diagnostic tests is of no value in improving the subject mastery of such pupils.

The teacher in discovering the pupils who need remedial help should by all means avoid the naïve assumption that a given grade norm for a test is necessarily an acceptable standard of achievement for all pupils in the grade. A moment's consideration will show that, in fact, the norm may not be a suitable achievement standard for any of the pupils.¹

3. Pupils of low achievement and those whose achievements in the various phases of the subject are inconsistent are likely to profit more from remedial teaching than those whose achievements are above the average. High-achieving pupils may be excused from most of the remedial instruction, special assignments being made for them according to their interests and abilities. A constant check should be kept on these pupils, however, by requiring them to take all the diagnostic tests. "Pupils of high mental ability who encounter learning difficulties and become remedial cases need a different type of instruction from pupils of low mental ability."² The encouragement of self-diagnosis, the motivation of interest, and the presentation of suitable problems which challenged the pupils' abilities were found to be effective measures.

4. Observation of the pupils' methods of work is a valuable aid to diagnosis. In doubtful cases individual retesting for this purpose was found to be advantageous. Gestalt psychology teaches that facts have meaning and value only when considered in connection with their antecedents and consequents. Therefore, it is more important to discover how the pupil acquires his skills, habits, and techniques than it is to measure the exact amount of knowledge that he possesses.

¹ *Ibid.*, p. 12.

² *Ibid.*, p. 16.

CORE-CURRICULUM DEVELOPMENTS IN CALIFORNIA

II. THE GENERAL SITUATION

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AN EARLIER article¹ in this series of two reported on five schools which have made innovations in their programs. The study reported here is a questionnaire investigation of the core curriculums in 283 secondary schools of California. The information was gathered over the names of Ethel Percy Andrus, president of the Association of California Secondary-School Principals; A. C. Argo, chairman of the Committee on Core-Curricula of the Association of California Secondary-School Principals; Aubrey A. Douglass, chief of the Division of Secondary Education, California State Department of Education; and the writer of this report.

DATA EMPLOYED

An eight-page form was mailed to principals of secondary schools at about the middle of the 1936-37 school year. Although information was requested on several aspects of the curriculum, only that part which deals with the courses specified for all pupils will be presented here. Usable replies were received from 283 institutions, or 51.9 per cent of the schools of similar type within the state. This number included 54, 41.9 per cent, of the junior high schools (Grades VII-IX); 20, 57.1 per cent, of the senior high schools (Grades X-XII); 13, 27.1 per cent, of the junior-senior high schools (Grades VII-XII); 177, 60.6 per cent, of the four-year high schools (Grades IX-XII); and 19, 46.3 per cent, of the junior colleges (Grades XIII-XIV). These schools were representative of the schools of the state in respect to size.

¹ Gordon N. Mackenzie, "Core-Curriculum Developments in California: I. Innovating Schools," *School Review*, XLVII (May, 1939), 337-51.

THE PORTION OF THE PROGRAM DEFINITELY SPECIFIED

The total number of units specified.—In harmony with the adopted definition of the core curriculum, "that body of experiences in which all students participate,"¹ it is pertinent to determine the portion of the total program required for graduation which is definitely specified for all pupils. If the course work in all types of secondary schools was to be placed on a comparable basis, some common unit of measure was necessary. Therefore, any class, including physical education, which met five times a week for one year was regarded as a one-unit course. All tabulations were in terms of the nearest half-unit. In the determination of the total number of units required by any particular form of secondary-school organization, the modal practice was taken as the standard. Thus, in the junior high schools the modal practice involved thirty hours a week in Grade VII, thirty hours a week in Grade VIII, and twenty-five hours a week in Grade IX. In terms of the adopted definition of units, these requirements would be the equivalent of six units in Grade VII, six units in Grade VIII, and five units in Grade IX, or a total requirement of seventeen units for the junior high school. On a similar basis the total number of units required in the several kinds of secondary-school organizations was determined. The requirements were found to be fifteen units for the senior high school, thirty-two units for the junior-senior high school, twenty units for the four-year high school, and 6.4 units for the junior college. In the latter case ten semester hours were taken as the equivalent of a unit. This slight variation for the junior college presented a more readily comparable basis than a scheme which attempted to make allowance for the extra class hours incident to laboratory work at the junior-college level. However, this plan does not allow as much credit for physical education as was given at the other levels.

The portion of the total program required for graduation which was definitely specified was computed on this basis for each institution. The median practice in junior high schools was to specify 13.5 units, or 79.4 per cent of the total required for graduation; in senior high schools, 7.5 units, or 50.0 per cent; in junior-senior high schools, 23.0 units, or 71.9 per cent; in four-year high schools,

¹ *Ibid.*, p. 338.

10.0 units, or 50.0 per cent; and in junior colleges, 1.0 unit, or 15.6 per cent. The differences among the schools of various types indicated clearly the generally recognized fact that the proportion of the work definitely specified decreases with an increase in grade level. However, there were individual senior high schools which specified a larger total number of units than did certain junior high schools. Within each classification of schools, with the exception of junior-senior high schools, there were institutions which specified fully twice as much as others.

If space permitted the inclusion of tabulations of schools of different sizes, it would be evident that schools enrolling less than five hundred pupils specified slightly more than those enrolling more than one thousand, as indicated by the median.

THE NATURE OF THE SPECIFIED PORTION OF THE PROGRAM

The method of reporting the data.—One of the most significant items of information concerning the work specified for all students involves the subject areas included. What was the relative emphasis given to the several subject fields? Data have already been presented indicating that, in junior high schools, senior high schools, junior-senior high schools, and four-year high schools, one-half to almost four-fifths of the total program required for graduation was definitely specified. A more detailed description of this specified portion of the course work is given in Table 1, which is read as follows: 100.0 per cent of the junior high schools required English, and the median number of units required was 3.0. Where less than 100.0 per cent of the schools made requirements in a particular subject field, the median number of units required was based on the schools actually making requirements. While there were some differences between the requirements of large and small schools, they were not sufficient to warrant special consideration in this brief account. For purposes of inclusion in Table 1, all courses were classified under the traditional subject-matter headings. Fusion courses consisting primarily of English and social studies, which were typically double-period courses, were tabulated as one-half English and one-half social studies. In a later section of this article these new-type courses will be reported separately.

TABLE 1
PERCENTAGES OF SCHOOLS OF VARIOUS TYPES WHICH MADE REQUIREMENTS
IN THE SEVERAL SUBJECT FIELDS AND MEDIAN NUMBER
OF UNITS REQUIRED

Subject Field	Junior High Schools (54)	Senior High Schools (20)	Junior- Senior High Schools (13)	Four- Year High Schools (177)	Junior Colleges (19)
English:					
Percentage requiring*.....	100.0	100.0	100.0	99.4	47.4
Median units required†.....	3.0	2.0	5.0	3.0	0.6‡
Social studies:					
Percentage requiring.....	100.0	100.0	100.0	100.0	94.7
Median units required.....	3.0	1.5	4.5	2.0	0.3
Mathematics:					
Percentage requiring.....	92.6	5.0	92.3	23.2	.....
Median units required.....	2.0	1.0	2.0	1.0	.....
Science:					
Percentage requiring.....	85.2	70.0	100.0	62.1	5.3
Median units required.....	1.0	1.0	2.0	1.0	0.3
Home arts:					
Percentage requiring.....	81.5	30.0	92.3	23.2	.....
Median units required.....	1.0	0.5	2.0	1.0	.....
Industrial arts:					
Percentage requiring.....	77.8	5.0	84.6	10.2	.....
Median units required.....	1.0	1.0	2.0	1.0	.....
Commerce:					
Percentage requiring.....	5.6	.....	7.7	4.0	.....
Median units required.....	0.5	.....	1.0	1.0	.....
Foreign language:					
Percentage requiring.....	5.6	5.0	.....	1.1	.....
Median units required.....	0.5	1.0	.....	2.0	.....
Music:					
Percentage requiring.....	81.5	.....	61.5	2.3	.....
Median units required.....	0.5	.....	0.5	0.5	.....
Art:					
Percentage requiring.....	77.8	.....	69.2	2.3	.....
Median units required.....	0.5	.....	0.5	0.5	.....
Physical education:					
Percentage requiring.....	100.0	100.0	100.0	100.0	100.0
Median units required.....	3.0	3.0	6.0	4.0	0.2
Hygiene:					
Percentage requiring.....	.....	5.0	.....	2.3	100.0
Median units required.....	.....	1.0	.....	1.0	0.2

* Refers to the percentage of the number of schools of each type, indicated at the head of the column, which made requirements in the particular field.

† Refers to the median number of units required by those schools which made requirements in a particular field.

‡ One unit in this and subsequent junior-college tabulations is the equivalent of ten semester hours. This unit is not strictly comparable to the units in the preceding four columns and cannot be converted directly into class periods a week. The sciences and physical education have been recorded on the basis of their semester credit value, without allowance for the larger number of class hours required per credit as compared with other subjects.

Requirements in English.—An examination of Table 1 indicates that English was required by almost all schools concerned with the first six years of the secondary period. Reports from schools, although not indicated in this table, showed that this requirement usually was confined to Grades VII through XI regardless of the form of school organization. Almost half of the junior colleges required six semester hours of work in this area. The brief descriptions given on the inquiry blank indicated that, primarily, the English courses consisted of literature, composition, and grammar. However, in Grades XI and XII opportunities were frequently offered to fulfil the requirement by taking courses in literature, journalism, dramatics, oral English, business English, or remedial English. At the junior-college level the English work usually consisted of the regular composition and rhetoric, although in a few cases there were opportunities to substitute courses in public speaking, business English, or reading.

Requirements in social studies.—A requirement in the social studies was almost universal. At the junior high school level the median practice was to require 3.0 units. The title "Social Studies" was used in over 50 per cent of the schools, and another 30 per cent used the title "Social Science." Although the descriptions of these courses often included the words "history," "geography," and "civics," there was also frequent occurrence of such terms as "social living," "problems of American civilization," "changing America," "community life," "orientation," "personal problems," and "vocational guidance." At the senior high school level a course in American history, which appeared under various titles, and a course in civics were commonly required. American history was a one-unit eleventh-grade course in 85 per cent of the schools, and civics was a half-unit twelfth-grade course in one-half of the schools. In some cases the civics work was included in the American history course. In the junior-senior high schools the social-studies pattern closely approximated those already described for the junior high school plus the senior high school in that there was a three-year sequence in the lower three years and American history in Grade XI.

In the four-year high schools the social-studies work was in accord with what might be expected from the preceding analysis. American

history appeared in 164, or 92.7 per cent, of the schools, and in all but one case was a one-unit course. In three-fourths of the schools, this course was offered in Grade XI. Civics was required in 37, or 20.9 per cent, of the schools and in 78.4 per cent of these cases was a half-unit course. Civics was given in Grade XII in 67.6 per cent of the cases; in Grade IX, in 24.3 per cent; and in Grade XI, in 8.1 per cent. This variation may introduce some confusion unless the typical California situation is known. When American history was the only social study for Grades XI and XII, it almost invariably consisted of a half-unit of American history and a half-unit of civics. Some schools had gone farther and provided a year course in American history and a half-year course in civics. In a few cases this latter course had been expanded to a full-year course. The civics found in Grade IX was usually a year course and came under the titles of "Civics," "Citizenship," "Community Civics," and the like. At this level it was more likely to deal with local and state problems than was the twelfth-grade course. The titles "Social Science," "Social Studies," and "Current Problems" occurred frequently in all grades. There were, of course, numerous other titles. The reports on the inquiry blank indicated that a fifth of all courses in the social studies were new and that fully another two-fifths had been revised within the past five years. Ancient history appeared only twice and world-history only eleven times. Except for these thirteen courses and the American history, there was no other mention of history. While many history courses were, undoubtedly, concealed under the more general and ambiguous titles, there were many evidences in the comments made that large numbers of schools were getting away from the historical and the chronological approach to social-studies problems. This change was frequently declared to have been necessary in order that the needs of pupils might be met.

At the junior-college level 94.7 per cent of the institutions made requirements in the social-studies area. The most common prescription was a course of two semester hours running for half the Freshman year, or Grade XIII. Although this course was generally called "American Institutions," it was also listed under the heading of "Political Science," "History," or even "Orientation." In these latter cases the subtitle or descriptive phrase was usually "American

Institutions." This course was specified in all institutions except one four-year junior college where the requirement seemingly could be met by courses in Grade XI or XII. The title "Orientation" was found in eleven institutions, or 57.9 per cent. This course was usually a two-unit course, although it also occurred as a one-unit and a four-unit course. Typically it ran for two semesters, although the variation was from one to four semesters. Characteristically the work in orientation dealt with problems of how to study, orientation to college life, and miscellaneous guidance problems.

Requirements in mathematics.—The work in mathematics was located primarily at the junior high school level and was described by this label in over half the schools. Many used the term "arithmetic" instead. Almost all junior high schools required mathematics in Grades VII and VIII, but only 16 per cent made the requirement in Grade IX. In the junior-senior high schools the situation was similar. However, in the two junior-senior high schools which required mathematics in Grade IX, either business mathematics or algebra could be taken. While mathematics was required in 23.2 per cent of the four-year high schools, this requirement could generally be met by taking algebra, general mathematics, or business mathematics.

Requirements in science.—At the junior high school level the science requirement was commonly general science. Eighty-four and eight-tenths per cent required this course in Grade VIII, 54.3 per cent in Grade VII, and 6.5 per cent in Grade IX. Frequently the course was required in both Grades VII and VIII with a half or a full unit in each grade. Three schools had a fused course in science and mathematics as a half-unit requirement in Grade VIII. Another school had a one-unit fused course in science and social science in Grade VIII.

The science of the senior high school was a subject-matter-area requirement. In approximately half the schools the requirement could be met by taking a course in chemistry, physics, biology, or physiology. General science and botany were provided in a fifth of the schools. Almost all these science courses were recommended for Grade X or XI, with only physics being suggested for Grade XII by as many as 40 per cent of the schools offering this subject. In the

junior-senior high schools at least one of the two units in science commonly consisted of general science. In fact, general science was required in 84.6 per cent of these schools. Frequently it was a one-unit course in Grade VIII, although it was sometimes required in two or three successive years of the junior high school period with one-half to a full year's work in any of the three. The second required unit in science was ordinarily to be selected from chemistry, biology, and physics, and in a small number of schools from agricultural science and physiology. All these were predominantly confined to the last three years of the junior-senior high school.

Science, as a subject area, was required in 62.1 per cent of the four-year high schools. Pupils were generally free to select the particular subject which they would take. General science was listed 40 times, or in 36.4 per cent of the schools. Although it was primarily for Grade IX, other courses could be taken in substitution in many schools. Biology was offered in 84.5 per cent of the schools and, in 69.9 per cent of the schools in which it was offered, was a Sophomore subject. Chemistry and physics were almost as common and were chiefly eleventh-grade subjects, although physics was indicated almost one-third of the time as a twelfth-grade subject.

Requirements in home and industrial arts.—Home and industrial arts appeared most frequently in the junior high schools and in the junior-senior high schools. Although a one-unit required course in Grade VII was the most common practice, there were three other arrangements which occurred almost as often. These provided for the spreading of the equivalent of one, one and a half, or two units over the two-year period encompassed by Grades VII and VIII. A very small percentage of the schools required work in all three junior high school years.

Requirements in commerce and foreign language.—In both commerce and foreign language insignificant proportions of the schools made specific requirements.

Requirements in music and art.—As is noted in Table 1, music and art were required most frequently in junior high schools and in junior-senior high schools. Almost invariably these courses were half-unit courses and were listed for Grade VII. A few schools gave them in Grade VIII or IX.

Requirements in physical education.—The standard practice provided for five class meetings a week in physical education. However, a large number of the junior high schools had only two or three class meetings a week, especially in Grades VII and VIII. The program was largely one of games and sports, and incidental attention was given to the formation of health habits and to instruction in hygiene. Occasionally, military drill was offered as a substitute at the upper levels. The hygiene and physical-education requirements at the junior-college level were in accord with state law. Hygiene was commonly a course of two semester hours meeting for one or two semesters in the Freshman year. Physical-education classes met two periods a week for two years in most institutions, and two semester hours of credit were given for the whole program.

New-type courses.—As was indicated earlier, all courses were classified along subject-matter lines for purposes of reporting in Table 1. However, a significant proportion of the schools had reorganized a part of their programs by developing a required course which met ten hours a week and which was referred to by such titles as "Basic Course," "Social Living," "Core Course," or "English and Social Studies." In the great majority of the schools where this change had taken place, there had been a combining of the time allotments of English and social studies, with a resulting provision of a two-hour core course organized around personal and broad social problems. In many cases subject-matter lines had been disregarded, and a problem organization used. Any and all fields were drawn on in accord with their contribution to the solution of the problem at hand. In actual practice, probably the subject fields of music, art, and science, in addition to English and the social studies, were utilized most extensively in these courses. The range of this development is indicated by Table 2. In junior high schools, for example, 27.8 per cent reported that they had such a course in Grade VII. The junior-senior high schools revealed the largest percentage of reorganizations. In a small proportion of the schools of all types reported in this table, some sections were still retained on the traditional basis, with separate courses in English and social studies. Thus, only a part of the student body was enrolled in the new-type courses. While the great majority of these courses were of the fusion type,

meeting ten hours a week, there were a few exceptions. Some of these variations, as well as a more detailed account of the nature of the program in these innovating schools, were given in the earlier article. Table 2 does not include the few examples of fused courses in science and mathematics or science and social studies which were mentioned above.

The total pattern of required courses.—The analysis given indicates that, regardless of the kinds of secondary schools which a pupil might have attended, he would be likely to have had about the same core

TABLE 2
PERCENTAGES OF VARIOUS KINDS OF SCHOOLS WHICH
PROVIDED NEW-TYPE COURSES IN THE
SEVERAL GRADES

Grade	Junior High Schools (54)	Senior High Schools (20)	Junior- Senior High Schools (13)	Four-Year High Schools (177)
VII.....	27.8	.....	46.2	.....
VIII.....	22.2	.....	46.2	.....
IX.....	16.7	.....	38.5	7.3
X.....	.....	15.0	15.4	2.3
XI.....	.....	10.0	23.1	4.0
XII.....	.....	10.0	7.7	0.6

of required subjects. (No attention was given to the secondary-school organizations in which Grades VII and VIII were grouped alone nor to those which operated under the four-four plan.) While there were wide differences among schools, the group data presented a rather accurate picture of individual programs. As a means of checking this finding, the pattern of requirements for each school was recorded, and these patterns, in a majority of the cases, were found to resemble closely the total pattern of required work revealed in the group data. Thus a pupil who has spent eight years in California secondary schools has probably been required to take the following: eight years of physical education, with some attention to health and hygiene, the latter having been provided in a separate course in Grade XIII or XIV; five years of English in Grades VII through XI; five and one-half years of social studies in Grades VII

through IX and Grades XI through XIII; two years of mathematics in Grades VII and VIII; two years of science, which has probably been given in Grades VIII and XI; one-half to one year each, in Grade VII, of home or industrial arts, music, and art.

This pattern of experiences obviously does not adequately reflect the newer programs which incorporated fused or integrated courses, since these were in operation in less than half the schools of any type. Their maximum representation, which was in the junior-senior high schools, totaled only 46.2 per cent of the schools. Further, the newer programs were often started in the lower grades, sometimes with only one class group, and were then gradually extended upward. In many schools the development had not yet been completed.

EVALUATION AND CONCLUDING COMMENTS

Bases for evaluation.—Any evaluation of the pattern of specified activities found in the secondary schools of California might well be made on the basis of the purposes of secondary education. In many schools the admission would probably be readily made that the purposes of the program had not been clearly formulated. However, many faculties were seriously striving to rethink their problems, to clarify their purposes, and to build a program appropriate for the attainment of these purposes. The task was not a simple one, and naturally much confusion resulted. There is not space here to consider in detail the many beliefs and underlying assumptions held by the proponents of various points of view. Therefore, one point of view will be stated briefly and used as a guide in analyzing present programs.

Increasing recognition is apparently being afforded the position that the schools should be socially oriented, that they should be social agencies organized to aid a society in the attainment of its purposes. There is good historic as well as current justification for this position. In a democratic society, therefore, the schools become one of the primary agencies to aid in the attainment of the ideals and values and to perpetuate and improve the procedures and way of life which characterize this kind of society. While a detailed analysis of the values and the needs of American democracy is not possible here, the ideal of maximum self-realization for every individual within the

limits of the general welfare will be readily recognized as an item of basic importance. Students of American life have become increasingly aware that our system of values is not something which is inherited but rather that it is in grave danger of disappearing. If the democratic manner of living is to be retained, serious educational effort is demanded. Only insofar as citizens have the ability and the desire to develop and maintain democratic processes will these processes persist. Thus the schools would seem to have some responsibility for developing these abilities and desires on the part of their pupils. Further, if individuals are to live at their maximum level of competence and are to attain the maximum level of self-realization, the schools must assist and guide them in order that they may live richly in the present, while in school, and thus secure the best foundation for living richly in the immediate future.

On the basis of this objective the assumption is often made that there is justification for a common core of experiences in which all pupils will engage for the purposes of achieving outcomes desirable for all persons in this society. These outcomes include, first, the skills, the abilities, and the kinds of behavior needed for successfully using democratic methods to achieve a culture which will represent the fullest possible realization of democratic ideals; and, second, the knowledge, the attitudes, and the broad understandings in those basic aspects of living in which all will or should participate for their own maximum self-realization and for the attainment of the highest possible level of general welfare. The development of common understandings as a result of such a program should do much to create a population which is sufficiently homogeneous to live peaceably and in harmony with one another. There are, of course, vocational and special abilities which would be developed through an elective program paralleling the common, or specified, portion of the program.

The actual development of the outcomes listed above would seemingly involve much practice and experience. Such characteristics of behavior as those implied by the terms "co-operativeness," "self-direction," "a scientific approach to problems," "tolerance," "social sensitivity," and "creativeness" would certainly be necessary. Knowledge, attitudes, and broad understandings in all the following basic aspects of living would be necessary supporting struc-

tures to the modes of behavior indicated, if there is to be competent and successful living in all the major areas of human activity: (1) protecting life and health, (2) making a home, (3) conserving and improving material conditions, (4) co-operating in social and civic action, (5) getting a living, (6) securing an education, (7) expressing religious impulses, (8) expressing aesthetic impulses, and (9) engaging in recreation.¹ The assumption of the desirability of a curriculum to provide common outcomes includes the concept that these outcomes are too important to be left to chance in an elective system and that by nature they are such as to require the shaping of the environment and the consistent and continuous guiding of the experiences of pupils over a long period of time.

To what extent does the core, or common, curriculum found in California secondary schools harmonize with this concept of the role of the school? The point might be made—and with justification for certain schools—that the core curriculum, or the constant portion of the offering, was never intended for the attainment of the purposes here outlined. However, the unanimity with which the high schools required a certain specified part of their offerings would seem to imply that the persons responsible for educational programs believed that this portion of the work had some contribution to make to the living of all pupils. If this assumption be accepted, an examination of the curriculum pattern as found, in terms of the purposes and the expected outcomes of a core curriculum as described, would appear justified. Of course, classroom methods and actual subject matter are just as important as the pattern of curriculum organization and cannot justifiably be separated from it. However, as data have been presented primarily on the curriculum pattern, the analysis will be limited to this aspect.

Evaluation of existing core curriculums.—In terms of the purposes and the assumptions which have been discussed, the following statements appear to be justified.

1. There seems to be little evidence that any large proportion of the California secondary schools had well-planned core curriculums

¹ For a statement as to the major problems of life encompassed by each of these, see O. I. Frederick and Lucile J. Farquhar, "Problems of Life," *School Review*, XLVI (May and June, 1938), 337-45, 415-22.

for the attainment of the purposes of education in a democracy as these purposes have been outlined. The scope of most required programs was so limited that a pupil might spend eight years in the secondary school with little, if any, assistance in homemaking and home living; with little enrichment or understanding in the areas of religious or aesthetic expression; with little or no experience in actually co-operating with his fellow-men in social and civic action; with little competence for engaging joyfully in leisure-time activities; with little desire to further his education and, possibly, with less of an understanding of the ways in which the furthering of his education might be accomplished; and with little knowledge, understanding, or vision of the possibilities for conserving and improving man's material conditions and resources and thereby providing the economic basis for an abundant life.

True, some of these areas were touched on, but one may doubt whether the brief contact with the home arts, for example, which was given to girls early in the secondary-school period had as much effect in improving the quality of home living throughout the secondary-school period as this experience would have had if it had been organized on a different basis. Boys received little or no training in this area. Also, there is a real question whether the ninety or so lessons in art and music received in Grade VII permanently influenced the character of the living of boys and girls. Further, it is doubtful that the social studies were so organized as to achieve their maximum potential effectiveness in helping to utilize the resources of the country so as to achieve a sound economic basis for a modern democracy or in helping to build the behavior patterns needed for democratic living. The newer course organizations in the social studies seemed to hold promise of including some of the omissions of the usual programs and of focusing more directly on the solution of the problems of the present and the emerging future.

Until changes are made in many of the programs found, it seems doubtful that the common needs for living will be met. There is no assumption that all pupils will have, or should have, the same learning experiences. Instead, the emphasis is on the desirable outcomes in terms of the needed knowledge, understandings, attitudes, and abilities requisite for living democratically in all the areas already

suggested. The practice of specifying exactly how a pupil shall spend from one-half to three-fourths of his time seems to be extremely questionable in view of the narrow scope of the programs.

2. The arrangement of courses and their lack of sequence indicate a desire to give pupils contact with certain blocks of subject matter rather than to provide a developmental program which would result in a certain kind of individual. If the common, or core, program is to result in certain modes of behavior and controls of conduct, there is need for greater continuity in courses and in contacts with teachers and groups of students. Some organization is needed which will enable pupils to have much experience in co-operating with their classmates in civic and social action, abundant opportunity to engage joyfully in a variety of leisure activities, and numerous possibilities for actual participation in all the major areas of living. Longer working periods and an organization which permits the extension of the classroom into the home and the community are imperative if the required varieties and kinds of learning experiences are to be provided.

Obviously there are many aspects of the core-curriculum problem which are, of necessity, omitted from a brief report of this type. The details of content, pupil-teacher relations, method, and evaluation are of vital import and are in need of careful study.

JOURNALISTIC STANDARDS FOR HIGH-SCHOOL PUBLICITY

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*

A PREVIOUS article¹ emphasized benefits which the high school obtains from the appointment of a faculty director of publicity. Briefly, these benefits are as follows: (1) The morale of both teachers and pupils is raised appreciably. (2) The school gains in co-operation from the public. The preceding article also pointed out the scope of the publicity director's duties and suggested efficient methods of preparing the copy.

The purposes of this article are to analyze good newspaper style and to show how the director can employ it for his own uses. Over a long period of years journalism has evolved a standard technique suited to its needs and adapted to the reading habits of the public. The basic principles of this technique are generally known, but not all persons are aware of the important little tricks of the trade that make a good story out of an event which may, to the layman, seem insignificant. In order to obtain the full co-operation of the press, as well as to make the greatest possible appeal to the public, the publicity director must know and practice the methods of the journalist.

The lead of a story.—The first section of a news story is the lead—a short, vivid paragraph (occasionally two) which tells *who? what? when? where? why?* and *how?* Since a poor lead inevitably spoils a story, the lead is the most important element in journalistic writing. The first four of the six interrogations indicated above are always answered in the lead; the last two may sometimes be omitted. The following are examples of the lead.

J. Wendell Yeo, assistant director of the New Haven Y.M.C.A. Junior College, will speak to the high-school Seniors tomorrow afternoon on the topic

¹ Harvey B. Grocock, "Effective Newspaper Publicity for the High School," *School Review*, XLVII (March, 1939), 205-9.

"After High School." His talk is to be the first in a series of occupational conferences sponsored by the guidance department.

Miss Alice Driscoll, daughter of Mr. and Mrs. Joseph M. Driscoll of 74 Park Street, has been selected as the most outstanding girl in the Senior class of the local high school and may qualify for the D.A.R. Good Citizenship Pilgrimage to Washington, D.C., next April.

In making the announcement this morning, Principal Henry E. Cottle stated that by their choice the Seniors and the faculty have given recognition to Miss Driscoll's splendid qualities of dependability, service, leadership, and patriotism.

Such leads, technically known as "summary leads," tell the whole story in brief. Details are missing, of course, but the skeleton is there. On the peculiar merits of the material that he is handling, a writer must determine with which of the six items his story should begin. It may be said that *who* and *what* are most frequently used for the opening wedge, while *when* and *where* are employed least often.

For certain purposes the most effective lead is either a striking statement or an arresting question, because such a beginning makes an immediate, almost irresistible appeal to the reader. To illustrate:

"At the age of 25, Mozart was recognized as one of the world's greatest composers; at 35, he was dead."

With these words Director F. Charles Adler opened the high-school assembly program given yesterday afternoon by the Hartford Federal String Ensemble.

Such a lead is effective, but it is uncommon newspaper technique. A new reporter should avoid such unusual approaches until he has fully mastered the standard practices—and even then he should employ sparingly the unusual opening.

The body of the story.—The lead is followed by the body of the story, which adds further information to amplify what has already been said in the opening paragraph. These additional facts are written in the order of their decreasing importance. The following complete story illustrates the lead and the correct arrangement of the body.

Nine high-school Seniors have qualified for membership in the National Honor Society, according to a statement issued this morning by Percy F. Smith, faculty sponsor of the local chapter. They will be initiated on Friday afternoon of this week.

The new members are as follows: Miss Josephine Boi, daughter of Mr. and Mrs. John Boi of 163 Milton Street [and so on, with the names listed in alphabetical order].

Informal initiation exercises will be held at a tea in the high-school library on Friday, December 9, at 3:15 P.M. Mr. Smith stated that the parents of both old and new members of the society are cordially invited to attend. A special invitation, he said, is also extended to all alumni members.

A feature of the program will be a talk on "Hosteling through the United States," which will be given by Miss Dorothea Steed, secretary to the principal. Miss Steed, who traveled 10,000 miles last summer on a youth hostel trip, has chosen a theme of great interest to modern youth.

In commenting upon the National Honor Society, Mr. Smith pointed out that its high standards in a variety of fields make membership in the organization an honor of which any pupil may well be proud. Such membership is, he declared, the highest distinction which the local high school can confer upon its pupils.

To be honored with election to the society, the student must meet rigid requirements in four different fields, namely, scholarship, leadership, service, and character.

The Senior candidate must have a scholastic average for his first three years of at least 85. He must be recommended by his classmates as a person possessing leadership. Also he must receive from a teacher, a coach, or the principal a recommendation which he has earned as a result of some outstanding service that he has rendered to his school or to any other worthy community organization. Finally he must obtain the approval of the school faculty in regard to his good citizenship in school and community and his general moral character.

It is to be noted that the order throughout is from the more important to the less important. If the last paragraph is cut off, the account is still good, having lost only supplementary details. This process of elimination can continue until finally only the first three paragraphs are left, yet they still give an outline summary of the story.

There are good reasons why such an arrangement should be followed consistently. The employee in charge of making up the pages at the newspaper plant may find that an article is too long to fit the amount of space available. To make a fit for a properly arranged story, he can throw away the slugs of type for the last paragraph or two and make the adjustment without serious damage to the story. If another order of writing had been used, obtaining the necessary condensation would require the rewriting of the entire account. Since time never permits such rewriting, the whole story

may end in the wastebasket, to make room for something else which is of the right length.

The arrangement of facts on a scale of descending importance makes the greatest possible appeal to the busy reader of today, who gives his attention only to that which interests him. He reads as long as a story attracts him, then turns to something else. Hence the skilful journalist writes to catch the reader's eye at once through the presentation of outstanding facts, turning to the details last.

The headline.—The only part of the news story which has not yet been treated is the headline. Different sizes of type are used for headlines in order that stories of varying news values may be displayed with the proper degrees of prominence. Then, too, the number of letters which will fit across a newspaper column depends on the size of type. Because of these two facts, the writing of headlines is a highly specialized task, which is assigned to an experienced member of the newspaper staff. Rarely indeed does the reporter write his own heads. In headlining his story, therefore, the publicity director merely gives emphasis to the main point. If for a story of major importance he uses two sets, or "decks," of headlines, the second deck either amplifies the contents of the first or adds an entirely new point. The head should always contain a verb, either expressed or readily implied. The future tense is often expressed by means of the present infinitive. Since action is the keynote of newspaper tone, past tenses and passive voices are seldom used. The following are examples of headlines.

NATIONAL HONOR SOCIETY ELECTS NINE NEW MEMBERS

INFORMAL INITIATION FRIDAY AFTERNOON

GIRLS' FEDERATION TO HOLD MASQUERADE FRIDAY

PARENTS' NIGHT AT HIGH SCHOOL TOMORROW EVENING

Other "pointers."—The aim of all good newspapers is to present plain, unbiased facts. Because stories must at all times be impersonal, journalistic policy prohibits the use of "I" and "we" except on the editorial page or in direct quotation. A good reporter never lets himself and his opinions color his story. One way of avoiding the danger of editorializing (letting personal opinion enter the ac-

count) is to quote the authority for any statement against which such a charge could possibly be raised. In this connection note the fifth paragraph in the honor-society story given above. The reporter should also keep a close check on his use of adjectives, such as "inspiring" and "impressive." The resultant coloring may spoil the effect. If a program is inspiring, that fact can be brought out by quoting someone's comments on it. The method is safer, and the effect more convincing.

Names make news—and guarantee readers. A story results whenever anybody does something or is chosen to do something. The reason is that people, old and young, like to see their names in the paper. Journalists are aware of this fact and are always on the lookout for names. A story on preparations for the Senior prom, for instance, really gets most of its news value from the names of the members of the various committees. In important affairs this technique can perform double service if the names of the parents are included.

There is something of a problem connected with technicalities of style, for editors differ in their practices. One may write "Pratt Street," while another prefers "Pratt street." A chat with a reporter will settle such points for the director.

In handling publicity for his school, the director should always remember that brevity, simplicity, and clarity are almost as important as accuracy. The newspaper cannot afford to print a long story on an event of minor news value. At the same time, the reading public demands that news be reported briefly and vividly.

Of accuracy little needs to be said. The best way to secure accuracy is to make a mistake—once. The resultant inevitable "grief" will do more to inculcate the quality of accuracy than volumes of eloquent exhortation.

The writer, in this article and in the article appearing earlier, has stressed the value of newspaper publicity to the high school and has attempted to give practical suggestions on the various problems facing the person responsible for such publicity. Enthusiasm is the chief force needed to put a program into action; experience will give it journalistic caliber; the response, both in school and throughout the community, will more than pay for the labor.

SELECTED REFERENCES ON STATISTICS, THE THEORY OF TEST CONSTRUCTION, AND FACTOR ANALYSIS

FRANCES SWINEFORD AND KARL J. HOLZINGER
University of Chicago

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THE following bibliography has been selected from issues of educational and psychological journals from March, 1938, to February, 1939, inclusive. Some books published during this approximate period have also been included.

Sharp distinctions do not exist between the fields covered in this list, but, as an assistance to the student with special interests in one or more of the fields, the references have been classified under the following categories: theory and use of statistical methods, problems of test construction, and factor analysis. No articles dealing primarily with the use of tests have been included because these items are distributed functionally in other lists in the cycle, such as those dealing with secondary-school instruction, guidance, etc.

THEORY AND USE OF STATISTICAL METHODS

402. CONRAD, HERBERT S., and KRAUSE, RUTH H. "Students' Tables of the Unit Normal Curve, for Abscissae Expressed in Terms of the Probable Error or *PE*: I. Areas Corresponding to Abscissae; II. Abscissae Corresponding to Areas," *Journal of Educational Psychology*, XXIX (October, 1938), 491-500.

Two tables of the unit normal curve are presented, each containing a larger number of entries than previously published tables of the type.

403. DUNLAP, JACK W. "An Abac for Determining the Mean Deviation of a Class from the General Mean," *Psychometrika*, III (March, 1938), 41-44.
Presents an abac for determining the mean of a portion of a normal curve.

404. DUNLAP, JACK W. "Recent Advances in Statistical Theory and Applications," *American Journal of Psychology*, LI (July, 1938), 558-71.

Lists and briefly describes, under nine general heads, the significant contributions recently made in the field of statistics.

405. ENGLISH, HORACE. "The Procedure of Matched Cases—A Caution," *Journal of Educational Psychology*, XXIX (November, 1938), 620-22.
A short discussion of the assumptions on which the procedure of equated cases or groups is based.
406. HARSH, C. M., and STEVENS, S. S. "A Mechanical Correlator," *American Journal of Psychology*, LI (October, 1938), 727-30.
Describes a mechanical correlator by means of which correlation coefficients for samples of 80-200 can be estimated within limits of 0.02-0.04.
407. HERTZMAN, MAX. "Two Equations for the Study of Variability," *American Journal of Psychology*, LI (July, 1938), 571-74.
Derives formulas for the sum of all differences and the sum of the squares of all differences possible in a distribution of scores.
408. HEY, G. B. "A New Method of Experimental Sampling Illustrated on Certain Non-normal Populations," *Biometrika*, XXX (June, 1938), 68-80.
Investigates the theoretical distributions of correlation and regression coefficients and the ratio of two estimates of variance from four non-normal populations.
409. KENDALL, M. G. "A New Measure of Rank Correlation," *Biometrika*, XXX (June, 1938), 81-93.
Presents an easily applied method for computing a rank correlation and gives its standard error.
410. KENDALL, M. G., KENDALL, SHEILA F. H., and SMITH, B. BABINGTON. "The Distribution of Spearman's Coefficient of Rank Correlation in a Universe in Which All Rankings Occur an Equal Number of Times," *Biometrika*, XXX (January, 1939), 251-73.
A mathematical exposition of certain properties of Spearman's rank-correlation coefficient.
411. KUDER, G. FREDERIC. "Use of the International Scoring Machine for the Rapid Computation of Tables of Intercorrelations," *Journal of Applied Psychology*, XXII (December, 1938), 587-96.
Gives detailed instructions for using the International Scoring Machine to obtain intercorrelations in case Hollerith equipment is not available. The technique is recommended if intercorrelations of at least five variables are desired for fifty to two hundred cases.
412. ROSS, ROBERT T. "A Statistic for Circular Scales," *Journal of Educational Psychology*, XXIX (May, 1938), 384-89.
Discusses briefly the problem of the circular scale and offers a vectorial method of solution.
413. SCATES, DOUGLAS E., and FAUNTLEROY, VIRGINIA. "The Effect of Weights on Certain Index Numbers," *Journal of Experimental Education*, VI (March, 1938), 282-306.

An experiment with data from four published studies "to ascertain the effects of different sets of weights on the resulting index numbers under normal working conditions."

414. THORNDIKE, E. L. "On the Fallacy of Imputing the Correlations Found for Groups to the Individuals or Smaller Groups Composing Them," *American Journal of Psychology*, LII (January, 1939), 122-24.
Warns against a common misinterpretation of correlation. The argument is illustrated with artificial data.
415. TRAVERS, R. M. W. "The Use of a Discriminant Function in the Treatment of Psychological Group Differences," *Psychometrika*, IV (March, 1939), 25-32.
Illustrates a technique for determining weights for the linear combination of several measures in order that maximum discrimination may be obtained between two given groups of individuals.
416. WHERRY, ROBERT J. "Two Methods of Estimating Beta Weights," *Journal of Educational Psychology*, XXIX (December, 1938), 701-9.
Presents and illustrates two approximation methods for calculating regression weights and multiple-correlation coefficients.
417. WILKS, S. S. "Weighting Systems for Linear Functions of Correlated Variables When There Is No Dependent Variable," *Psychometrika*, III (March, 1938), 23-40.
Describes three methods of combining tests or other variables when the use of multiple correlation is not possible because no criterion variable is available.
418. WREN, F. L. "The Calculation of Partial and Multiple Coefficients of Regression and Correlation," *Journal of Educational Psychology*, XXIX (December, 1938), 695-700.
A systematic method for calculating partial and multiple coefficients of regression and correlation is presented and illustrated with numerical examples.
419. YULE, G. UDNY. "On Some Properties of Normal Distributions, Univariate and Bivariate, Based on Sums of Squares of Frequencies," *Biometrika*, XXX (June, 1938), 1-10.
A mathematical discussion, with numerical examples.

PROBLEMS OF TEST CONSTRUCTION

420. ANDREW, DOROTHY M., and BIRD, CHARLES. "A Comparison of Two New-Type Questions: Recall and Recognition," *Journal of Educational Psychology*, XXIX (March, 1938), 175-93.
A comprehensive study of the relative merits of recall and recognition tests at the college level. The two types of questions are compared with respect to reliability, difficulty, variability in total score, and value as instructional aids.

421. ANDREW, DOROTHY M., and BIRD, CHARLES. "The Stability of New-Type Questions," *Journal of Educational Psychology*, XXIX (October, 1938), 501-12.
Report of a study designed to investigate the relative stability of the interval consistency of four kinds of new-type test items. The questions were repeated with the same students during the same term and with different students in different years.
422. BRADWAY, KATHERINE PRESTON. "Scale Calibration by the Thomson Method," *Journal of Educational Psychology*, XXIX (September, 1938), 442-48.
Discusses five uses to which the Thomson method of scale calibration may be put.
423. COURTIS, S. A. "The Interpretation of Scores in Tests and Examinations," *Journal of Educational Research*, XXXI (May, 1938), 637-49.
A discussion of the meaning of test scores and the factors which serve to differentiate achievement scores from measures of ability.
424. DIAMOND, SOLOMON. "The Typewriter as an Aid in Item Analysis," *American Journal of Psychology*, LII (January, 1939), 111-13.
Suggests a method by which the typewriter can replace the card-sorting machine in the analysis of test items and of individual scores.
425. DUNLAP, JACK W. "The Relationship between the Type of Question and Scoring Errors," *Journal of Experimental Education*, VI (March, 1938), 376-79.
An experiment to determine the relation between the form in which test questions are presented and the percentage and the direction of scoring errors that might be expected.
426. FORAN, T. G., and LENAWAY, SISTER M. ALBERT. "Comparative Difficulty of Three Forms of Computation Tests," *Journal of Educational Research*, XXXI (April, 1938), 568-71.
Report of an experiment to determine the relative difficulty of a mixed-fundamental test and tests in which the problems are sorted according to the processes of solution required.
427. GRAY, HOWARD A. "Recorded Sound in the Field of Achievement Testing," *Journal of Educational Research*, XXXI (April, 1938), 608-15.
Suggests the possible use of recorded sound in testing. Reports the results of three achievement tests administered both by the recorded-sound technique and by the ordinary paper-and-pencil technique.
428. KELLEY, TRUMAN L. "The Selection of Upper and Lower Groups for the Validation of Test Items," *Journal of Educational Psychology*, XXX (January, 1939), 17-24.
Shows that extreme criterion groups should each include 27 per cent of the cases in problems of test-item validation.

429. LEV, JOSEPH. "Evaluation of Test Items by the Method of Analysis of Variance," *Journal of Educational Psychology*, XXIX (November, 1938), 623-30.
A procedure for validating and weighting multiple-choice test items which are graded to measure degree of reaction.
430. MILLER, JOSEPH. "Intelligence Testing by Drawings," *Journal of Educational Psychology*, XXIX (May, 1938), 390-94.
Offers a scale, consisting of drawings to be copied by the subject, as a ready means of tentatively ascertaining general intelligence.
431. PINTNER, R., and FORLANO, G. "Validation of Personality Tests by Outstanding Characteristics of Pupils," *Journal of Educational Psychology*, XXX (January, 1939), 25-32.
Introduces a method by which personality tests might be analyzed and validated.
432. REMMERS, H. H., and WHISLER, LAURENCE. "Test Reliability as a Function of Method of Computation," *Journal of Educational Psychology*, XXIX (February, 1938), 81-92.
A discussion of the meaning of reliability coefficients computed by various formulas and their relative effects on additional formulas in which they are involved.
433. RICHARDSON, M. W., and ADKINS, DOROTHY C. "A Rapid Method of Selecting Test Items," *Journal of Educational Psychology*, XXIX (October, 1938), 547-52.
Describes a labor-saving technique for selecting test items that will maximize the validity of the test.
434. ROSS, ROBERT T. "A Simple Hollerith Technique for Scoring Tests," *American Journal of Psychology*, LI (April, 1938), 409.
Describes an application of Hollerith cards to the scoring of tests for which both item scores and subject scores are desired.
435. STALNAKER, JOHN M. "Weighting Questions in the Essay-Type Examination," *Journal of Educational Psychology*, XXIX (October, 1938), 481-90.
A rather complete discussion of the topic of weighting in the ordinary, modern essay-type examination.
436. SWINEFORD, FRANCES. "The Measurement of a Personality Trait," *Journal of Educational Psychology*, XXIX (April, 1938), 295-300.
Describes a means of employing any achievement test to obtain a measure of the subject's "tendency to gamble," in addition to the achievement score itself.
437. VERNON, P. E. "Intelligence Test Sophistication," *British Journal of Educational Psychology*, VIII (November, 1938), 237-44.
Report of an experiment at college level to determine the possible effect on test score of the degree to which the person is "test wise."

FACTOR ANALYSIS¹

438. BURT, CYRIL. "Recent Developments of Statistical Method in Psychology: I," *Occupational Psychology*, XII (Summer, 1938), 169-77.
Briefly describes the role of factorial methods in psychological description and prediction. Compares these methods with those used in quantum physics.
439. BURT, CYRIL. "The Unit Hierarchy and Its Properties," *Psychometrika*, III (September, 1938), 151-68.
Presents the theory which underlies a "modified form of factor analysis."
440. BURT, CYRIL. "The Relations of Educational Abilities," *British Journal of Educational Psychology*, IX (February, 1939), 45-71.
A study designed to analyze the factorial content of thirteen school subjects. Several factor methods are compared, and the stability of factors from one sample to another is investigated.
441. COX, GERTRUDE M. "The Multiple Factor Theory in Terms of Common Elements," *Psychometrika*, IV (March, 1939), 59-68.
Factorial methods are applied to hypothetical data for which the solutions have been predetermined by the theory of common elements.
442. HARMAN, HARRY H. "Extensions of Factorial Solutions," *Psychometrika*, III (June, 1938), 75-84.
Develops a method for adding new tests to any factorial solution. A numerical example is included to illustrate the actual procedure.
443. HARMAN, HARRY H. "Systems of Regression Equations for the Estimation of Factors," *Journal of Educational Psychology*, XXIX (September, 1938), 431-41.
Suggests several methods of estimating factors of individuals when the factor patterns are known. The methods are applied to three types of factor solutions.
444. HEDMAN, HATTIE BAITY. "A Critical Comparison between the Solutions of the Factor Problem Offered by Spearman and Thurstone," *Journal of Educational Psychology*, XXIX (December, 1938), 671-85.
A discussion of some of the techniques and basic principles employed by Spearman and Thurstone in the field of factor analysis.
445. HOLZINGER, KARL J. "Relationships between Three Multiple Orthogonal Factors and Four Bifactors," *Journal of Educational Psychology*, XXIX (October, 1938), 513-19.
Compares bi-factor and multiple-factor solutions for real data, and lists reasons for accepting the former method in preference to the latter. (A correction of a typographical error is made on page 80 of the January, 1939, issue of the *Journal of Educational Psychology*.)

¹ See also Item 380 (Thurstone) in the list of selected references appearing in the May, 1939, number of the *School Review*.

446. HOLZINGER, KARL J., and HARMAN, HARRY H. "Comparison of Two Factorial Analyses," *Psychometrika*, III (March, 1938), 45-60.

Comparison of the bi-factor analysis of Thurstone's tests with the multiple factors which were described in an earlier paper. (See Item 429 [Thurstone] in the list of selected references appearing in the June, 1937, number of the *School Review*.)

447. HOLZINGER, KARL J., and SWINEFORD, FRANCES. *A Study in Factor Analysis: The Stability of a Bi-factor Solution*. Chicago: Department of Education, University of Chicago, 1939. Pp. xii+92.

An experimental study of the bi-factor method applied to the same battery of tests administered to two groups of elementary-school children. Investigates the reliability of factor estimates for individuals who were not in the group on which the regression equations are based. School marks are analyzed. All the basic data for the study, including samples of the tests, are appended.

448. LANDAHL, H. D. "Centroid Orthogonal Transformations," *Psychometrika*, III (December, 1938), 219-23.

Presents an orthogonal transformation which facilitates rotation of axes in a multiple-factor problem. (See Item 459 [Thurstone] in this list.)

449. MOSIER, CHARLES I. "A Note on Dwyer: The Determination of the Factor Loadings of a Given Test," *Psychometrika*, III (December, 1938), 297-99.

"A restatement of Dwyer's method in more condensed formulation, and an extension of it to the determination of primary trait loadings." (See Item 418 [Dwyer] in the list of selected references appearing in the June, 1938, number of the *School Review*.)

450. MOSIER, CHARLES I. "Influence of Chance Error on Simple Structure: An Empirical Investigation of the Effect of Chance Error and Estimated Communalities on Simple Structure in Factorial Analysis," *Psychometrika*, IV (March, 1939), 33-44.

Criteria of the completeness of factorization are tested by means of artificial data in which the chance errors are known.

451. SPEARMAN, C. "Thurstone's Work Re-worked," *Journal of Educational Psychology*, XXX (January, 1939), 1-16.

A detailed criticism of *Primary Mental Abilities* by Thurstone (Item 380 in the list of selected references appearing in the May, 1939, number of the *School Review*).

452. SWINEFORD, FRANCES. "Factor Analysis in Educational and Vocational Guidance," *School Review*, XLVI (December, 1938), 760-62.

A short discussion of the way in which factor analysis might function in vocational and educational guidance.

453. THOMSON, GODFREY H. *The Factorial Analysis of Human Ability*. Boston: Houghton Mifflin Co., 1939. Pp. xvi+326.

An elementary exposition of factor analysis. The five sections of the book are devoted to (1) the current leading factorial methods; (2) estimation of factors; (3) sampling; (4) inverse factor analysis, that is, analysis of correlations between individuals; and (5) interpretation of factors. The text, whenever possible, makes use of simple numerical examples in place of formulas. There is a short mathematical appendix.

454. THOMSON, GODFREY H. "The Influence of Univariate Selection on the Factorial Analysis of Ability," *British Journal of Psychology*, XXVIII (April, 1938), 451-59.
Formulas and hypothetical data are employed to show the influence which sampling of the population has on the factorial analysis of a battery of tests.
455. THOMSON, GODFREY H. "The Estimation of Specific and Bi-factors," *Journal of Educational Psychology*, XXIX (May, 1938), 355-62.
A general discussion of the estimation of the specific factors and group factors for an individual.
456. THOMSON, GODFREY H. "Recent Developments of Statistical Method in Psychology: II," *Occupational Psychology*, XII (Autumn, 1938), 319-25.
A general discussion of practical and theoretical aspects of factor analysis.
457. THOMSON, GODFREY H. "Maximizing the Specific Factors in the Analysis of Ability," *British Journal of Educational Psychology*, VIII (November, 1938), 255-64.
Compares the use of direct estimates with the use of factors in the field of vocational and educational guidance.
458. THURSTONE, L. L. "The Perceptual Factor," *Psychometrika*, III (March, 1938), 1-17.
A discussion, with special emphasis on the perceptual factor, of the application of a set of previously used tests to a new set of cases in order to verify identification of primary abilities.
459. THURSTONE, L. L. "A New Rotational Method in Factor Analysis," *Psychometrika*, III (December, 1938), 199-218.
A new method of rotation of axes is described and fully illustrated by the use of hypothetical data.
460. WOODROW, HERBERT. "The Relation between Abilities and Improvement with Practice," *Journal of Educational Psychology*, XXIX (March, 1938), 215-30.
A report of an experiment designed to determine the effect of practice on factor loadings of a number of tests.

Educational Writings

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REVIEWS AND BOOK NOTES

THE EDUCATION OF THE AMERICAN PEOPLE.—An English writer of the early 30's compared the "process of mental cultivation" in this country to the agricultural system. It was concerned, he thought, with quantity and covered a wide range of subject matter, but it lacked intensiveness and attention to detail. Any survey of the history of American education leaves the reader with a somewhat similar impression, when such topics as the development of the district system; the Ordinance of 1787 and land grants; the academy and the beginning of the high school; teacher training; the development of agricultural, home-economics, and commercial education and of music, art, and physical education are, of necessity, treated in a few scattered paragraphs. It is evident that a four-hundred-page textbook cannot give an adequate account of the evolution of public education in the United States, with its manifold administrative and curricular developments in elementary, secondary, and higher education. The value of such a treatment lies in the fact that here the student may see his own problem in perspective, that he may place it in the general historical setting and trace its growth in relation to other movements and problems. It is to be hoped that this view will be a starting-point and will give rise to a better understanding and to the desire to supplement his own study with more detailed and thorough investigation.

The writing of a history of education in the United States has long been considered an unusually difficult task. Difficulties are presented by the necessity of synthesizing forty-eight state histories, by the variations in social and economic factors in different sections of the country, and by the fact that comparatively little has been done in tracing curricular developments and method. Noble has given a succinct and readable account¹ of "the education of a nation" without wearisome detail. He has presented excellent résumés of political, social, and economic influences. He has given special attention to actual school conditions and practices. He has worked out a significant and a thought-provoking plan of organization without sacrificing chronological clarity. The strong point of the book is the treatment of the curriculum. A minimum of space is devoted to the rise of systems and to administrative developments.

Noble says of his book that it is an "interpretative volume." He has "undertaken to integrate data and give meaning to events." He has conceived educa-

¹ Stuart G. Noble, *A History of American Education*. New York: Farrar & Rinehart, Inc., 1938. Pp. xvi+440. \$2.50.

tion to be "a process of social and individual development, conditioned by environmental forces both within and without the schools" (p. vii). This point of view is exemplified in the emphasis on social and economic conditions, the influence of the frontier, and the changes in the character of the population. Of especial interest are the summaries of cultural development. Beginning with "The Heritage of English Culture" and continuing through the following periods, these summaries furnish a striking background for the portrayal of institutional practices.

The philosophical aspect of education is prominent and, to a large extent, determines the organization of the book. There are chapters on "The 'Age of Enlightenment' in Colonial America," "Liberalism in Education," "The Romantic Era," "The Drift into Modern Realism," and progressive idealism. The curriculum is presented from the point of view of underlying philosophy and objectives, with such chapter headings as "A Curriculum for Culture and Useful Information," "A Curriculum for Mental Discipline," "A Curriculum for Efficiency."

The format of the book is excellent. Numerous well-chosen illustrations add greatly to its attractiveness. Chronological continuity is made easy through the dates assigned to chapter headings. A "Pageant of American Schools," consisting of biographical accounts of nineteenth-century schools and schooldays, constitutes an interesting and enjoyable concluding chapter.

JEAN H. ALEXANDER

University of Minnesota

THE FIRST ALL-INCLUSIVE AND CRITICAL REVIEW OF TESTS.—Principals, teachers, test technicians, and educational research workers have long felt the need for a handbook on tests. Useful bibliographies and reviews have appeared from time to time, but no single source was available which could be turned to with assurance (1) that it was all-inclusive for a specified period and (2) that reviews would be sufficiently critical to serve as guides in selecting tests. The first attempt to provide such a compendium¹ includes critical reviews of tests and of books dealing with various phases of test construction, administration, and analysis; a list of regional testing program reports; and directories of periodicals and publishers. A full index of titles and of names adds greatly to the usefulness of this new volume.

In the Introduction the editor indicates that the need for such a volume is more pressing than is ordinarily assumed. "There probably has never before been a two-year period," he says, "in which so many tests were published. Furthermore, there probably has never been a time when so little information was presented about published tests" (p. 3). The evidence for this statement is

¹ Oscar Krisen Buros (Editor), *The Nineteen Thirty Eight Mental Measurements Yearbook of the School of Education, Rutgers University*. New Brunswick, New Jersey: Rutgers University Press, 1938. Pp. xiv+416. \$3.00.

not given, but anyone working in the field of measurement is constantly impressed with the paucity of information about tests. Publishers' advertising folders frequently recommend the widespread use of tests when there is no evidence available that the tests have ever been administered, to say nothing of having been evaluated. Buross' volume should make it harder to sell such tests.

This yearbook includes references to most of the pencil-and-paper tests published in the United States and the British Empire in 1937 and during the first four months of 1938. The general plan calls for the inclusion of the following information with each reference to a test: title, description of the group for which it was constructed, date of copyright or publication, an indication of whether the test is an individual or a group test, number of forms, cost, time required to give the test, author, publisher, and references from which additional information might be gleaned. To be sure, not all this information could be obtained for every test.

Practically all the 133 reviewers who co-operated with the editor of this book have contributed to the testing movement. Although test authors and publishers were given an opportunity to react to the reviews, their replies were not published in the volume. Obviously, with so many individual contributions, the reviews vary widely in providing critical appraisals of tests.

The reviews of tests and of research and books in statistical methodology are reprints from journals. The fact that these are brought together in one place will save much time for educational workers. The range in discrimination among the reviewers, however, is as wide as that represented in the professional literature.

By and large, the editor was most scholarly in the preparation of the yearbook. The following generalization in the Introduction, however, needs to be challenged: "For most of its tests, the Cooperative Test Service has given even less information than the commercial publishers" (p. 3). Having worked with information supplied by the Cooperative Test Service and by commercial publishers, the present reviewer is of the opinion that the information supplied by the former is far more adequate than that supplied by the average publisher of tests. Nevertheless, this criticism should not detract from the usefulness of the yearbook. It is indispensable to any person seriously interested in tests.

ALVIN C. EURICH

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COMPLEMENTARY TREATISES ON PHYSICAL EDUCATION FOR GIRLS.—For the person interested in the development or the revision of physical-education curriculums for high-school girls, these two books¹ form a nice pair. Taken to-

¹ a) Rosalind Cassidy, *New Directions in Physical Education for the Adolescent Girl in High School and College: A Guide for Teachers in Co-operative Curriculum Revision*. New York: A. S. Barnes & Co., 1938. Pp. xvi+232. \$2.50.

b) Therese Powdermaker, *Physical Education Play Activities for Girls in Junior and Senior High Schools*. New York: A. S. Barnes & Co., 1938. Pp. xii+370. \$3.00.

gether, they tend to complement each other in such a way as to provide a theoretical and philosophical background for program-building and practical suggestions for the selection of experiences. The two books are quite different in their emphases. One stresses the psychological and the philosophical in developing bases and methods for replanning the curriculum in physical education; the other states in terse, concise language, often using outlines, what the bases for program-building are, or should be, and stresses the kind of activities to be included in a physical-education program.

New Directions in Physical Education aims to help the teacher rethink the purposes and the nature of physical education in terms of the organismic point of view. In fact, the author states:

My purpose is quite simple: I wish to show to teachers, who are using physical-education experiences as their special tool for orienting the adolescent in her daily living, the applications of three hypotheses, or, more accurately, one hypothesis elaborated into three statements:

1. The *whole* is greater than the sum of its parts.
2. The *organization* of the parts and functions of the human individual is a *pattern*, unique to each; the further development of that pattern, according to its own unique design, makes for fullest growth.
3. The individual and the culture are an "orchestrated unity," each making the other. They cannot be separated unaltered and therefore cannot be understood or studied one apart from the other [p. v].

Although the author conceives her purpose as a simple one, the fulfilment of it is complex. Whether or not she fulfils her purpose remains for each reader of the book to decide.

One thing is certain: the person uninitiated or inexperienced in reading progressive pedagogy will be confused by the language and terminology which permeates the book, especially Part I. It may be true that "the first step in remaking an educational program for girls in present-day America must be that of clarifying, as fully as possible, the forces in our culture which are modifying and shaping the developmental pattern of girls in this 'orchestrated unity' of individual and environment" (p. 3), but the statement is hardly made in language that the physical-education teacher will easily understand. Perhaps it would be more accurate to say that the first step in remaking the physical-education program is to rethink many of the things which we have assumed to be true. It might be better to begin with the thinking of the teacher where *she is* and to point the direction as revealed by recent evidence—in language more easily understandable.

The general plan of the book is good. It begins with a discussion of the American adolescent girl, her needs and her place in a democracy. This chapter is followed by a discussion of the education of citizens for American democracy, in which the meaning of democracy and the purposes of education are stressed. Chapter iii attempts to answer the question of how the physical-education teacher defines the area of education for which she is specifically responsible.

Suggestions are made of the *tools* for physical education which will enable it to contribute "toward the continuous process of orienting the individual in the persistent problems of living" (p. 58).

These first three chapters form Part I of the book, which is devoted to *exploration*—exploration regarding the nature of the individual, the nature of society, and the nature and the function of education and of physical education. Numerous quotations are included. Many thought-provoking questions are posed. After completing the reading of this section of the book, one is slightly confused but impressed by the number of ideas introduced. Were the quotations more adequately interpreted and the ideas more pertinently summarized, the essential points of each chapter would stand out more clearly and the less pedagogically minded person would be enabled to understand more fully "what it is all about."

Part II of the book sets forth suggestions for method in curriculum-planning—how to go about doing the job. Here the pattern is more clearly defined. Some excellent suggestions are offered. These include the need for group thinking and group planning, the presentation of a usable skeleton chart for the selection of learning experiences, and descriptive accounts of various kinds of records and reports used in determining the *needs* of girls. In the opinion of this reviewer, the strength of this book lies in Part II. Chapter v, entitled "Self-Survey and Self-Direction: A Physical Education Program for Adolescent Girls," offers a plan "whereby students may be guided to see their own needs, set goals, make a plan of action, proceed towards these goals, evaluate progress, and plan for further progress" (p. 96). This objective calls for greater guidance than now prevails in the conduct of the physical-education program. Illustrative materials in this chapter, as well as the case-study materials in Appendixes I and II, present concrete suggestions on how guidance might function in this program.

Obviously, new programs imply new-type teachers. The suggestions for teacher training are full of implications. The bibliography, which comprises Part III, is well selected and well arranged for study purposes.

The plan for the book gives, at the opening of each chapter, a brief description of the pattern followed in the discussion of the chapter. This discussion is an aid in helping the reader obtain an overview of the chapter before plunging into its depth.

Certainly in the field of physical education this book stands alone as a distinct type. Either despite, or because of, the use of language, the book is destined to create discussion. It is hoped that during these discussions leadership capable of translating the contents and the ideas into more understandable terms will be present. Cassidy has attempted a difficult and a much-needed task. It does not seem presumptuous to predict that she will achieve the success of having written the most discussed book in physical education of a decade. The controversy bound to result should lead to a rethinking, a re-evaluating, and a restating of ideas with the end of redirecting programs of physical education to meet more adequately the needs of adolescent girls.

Powdermaker's book might enter into this rethinking process by furnishing the activities which provide the opportunity for experiencing the kinds of learnings most needed by the adolescent girl. This book is really a compendium of practical suggestions for making the conduct of the program effective. Suggestions are given for organization and administration of the program, including such detail as methods of classification, squad organization, beginning the class, testing and marking, excuses, roll call, and the kind and the amount of responsibility that pupils may assume in squad activities. These suggestions should be helpful in aiding the beginning teacher to stabilize the routines essential in efficient class management. Suggestions for intramural, interscholastic, and after-school games, as well as noonday recreation, playdays, tournaments, and athletic associations, are included in brief and concise form. There are also good comments on the importance of safety. A list of thirty reminders, in the nature of advice to the teacher and brief comments on size of class, budget, time allotment, facilities, teaching staff, planning, and types of activities in an adequate program, is included. All these suggestions are listed with brief comment in chapter i. Too many of them are listed as what *should* be done.

The remainder of the book is devoted to a description of various types of physical-education activities. These are presented in such a way as to give the teacher some idea of how to analyze and present the activities. Some sample lesson plans are included. Coaching and teaching hints are given, and the essential elements in various game skills are listed. The contributions of the activities to the objectives of physical education, namely, development of (1) organic capacity, (2) co-ordinations or neuromuscular skills, (3) interpretive processes, (4) impulses, and (5) standards of conduct, are indicated.

Chapters are devoted to self-testing activities, including stunts, apparatus, and game skills; games, including tag, relays, group games, and ball; coaching hints and techniques for archery, field hockey, basketball, golf, lacrosse, softball, tennis, and volleyball; and swimming.

To the teacher grounded in a sound philosophy of education and teaching, this book will be helpful in providing ideas for making the teaching process more effective. For the teacher lacking a sound philosophy, however, the suggestions might result in the making of a better technician but not a better teacher. If some attention could have been given to the importance of understanding the needs of the adolescent girl in program-building and of recognizing the opportunities inherent in the excellent list of activities suggested for meeting these needs, this book would have added value. It is essentially a book of materials and content, while the book by Cassidy is essentially one of philosophy and method. Reviewed together, the two books tend to complement each other and their individual values tend to be increased; reviewed separately, their weaknesses stand out more forcibly.

MABEL E. RUGEN

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SUPPLEMENTARY MATERIAL FOR THE TEACHER OF MATHEMATICS.—Progressive teachers have always increased the effectiveness of their teaching by supplementing the textbook, however good it may be, with additional instructional materials. Such instructors provide for individual differences by directing capable pupils to read along the lines of their special interests and by using carefully prepared practice exercises for pupils who are slow. They gather test materials to obtain information about the pupils' previous experiences and to measure attainments in the courses. They plan extra-curriculum activities. As a means of increasing interest and enthusiasm, programs are arranged for assemblies, clubs, plays, debates, contests, and exhibits. For developing appreciation of the practical, social, and cultural values of mathematics, field trips and excursions are made to banks, industries, and museums. Units of instruction are enriched, and devices are tried out for improving teaching procedures. Bulletin boards, slide rules, films, pictures, surveying instruments, and a carefully selected library are indispensable in modern teaching.

The busy teacher may recognize the value of such materials, but too often he finds it impossible to collect and organize them. He will, therefore, welcome a book which performs this task for him. Such a book is now available,¹ and it should be of great value to teachers of mathematics who wish to enrich their teaching. It will be no less useful to instructors offering courses in the teaching of mathematics and to research students. Indeed, it may be placed in the hands of pupils whose interests in mathematics have been aroused and who wish to go beyond the work presented in the basic textbook of a course.

E. R. BRESLICH

University of Chicago

AN ANTHOLOGY OF CONTEMPORARY LITERATURE.—The editors of this new textbook in literature² have selected their material in response to the demands of the contemporary trend in education—to meet the pupil's need for understanding contemporary life. They state their purpose to be to give to the pupil "an honest presentation of the many-sided life around him" so that his mind will reach out to a "fuller comprehension" and a "greater tolerance." With that as their objective the editors have selected material by contemporary writers appearing in periodicals, books, and collections of stories and poetry. Another contemporary trend, integration, is recognized by the inclusion of selections drawn

¹ Maxie Nave Woodring and Vera Sanford, *Enriched Teaching of Mathematics in the Junior and Senior High School*. A Source Book for Teachers of Mathematics Listing Chiefly Free and Low Cost Illustrative and Supplementary Materials. New York: Teachers College, Columbia University, 1938. Pp. x+134. \$1.75.

² *Adventures in Modern Literature*. Edited by Ruth M. Stauffer and William H. Cunningham. New York: Harcourt, Brace & Co., 1939. Pp. xiv+1170. \$2.20.

from a number of fields of interest—science, industry, and the various aspects of human relations, from war to sports.

The material is arranged according to type, beginning with the short story drawn from American and European writers, followed by articles by Americans on various subjects of current interest, several biographical sketches, and the familiar essay. Then come a section of American poetry; a series of humorous sketches (both prose and poetry); and a drama unit offering two full-length plays, two one-act plays, a radio play, and a motion-picture script. A group of British poems, ranging from Kipling to Masfield, and Conrad's novel, *The Rover*, complete the book. Judging by the heavy "meaty" quality of a large part of the contents, one would say the book is intended for the twelfth-year level, certainly not for pupils below the eleventh year.

The choice of material, in its concentration on twentieth-century writers, represents a departure from most books on literature. The material is fresh, new, timely, and varied. The biographical data are relevant and interesting. The technical analysis of literary types is simple, direct, and helpful. The bibliographical information and the suggestions for study open vistas for future reading and study. The excellently chosen illustrations illumine the book and challenge the interest of readers.

The reviewer, however, questions the adequacy of the choice of selections to meet the stated objective of the editors: to give the pupil a "presentation of the many-sided life around him." What aspects of contemporary life are today increasingly calling for our consideration through press, forum, public polls, radio, and literature? The democratic way of life, the attempts of labor to attain the more abundant life, foreign ideologies and their repercussions in America, and international relations are occupying the forefront of our thinking. In poetry the editors have included selections that should lead to fruitful discussions. Several plays interpret contemporary problems, but the sections on the short story and the article could have been enriched from the wealth of pertinent writing today. Certainly in the latter section the aspects of life which have been mentioned should have found challenging expression. The reviewer also questions the choice of Conrad's *The Rover*.

Naturally one is moved to ask: How can teachers best use this book? How can the teachers who are attempting to teach by means of the unit or broad center of interest utilize the selections? An attempt at unification is made in the grouping of the articles under the following headings: "The Individual and His Problems," "The Individual and Society," and "Science in the Modern World."

Since many teachers are trying to shift from the chronological presentation of material or the study of types to the recognition and development of broad centers of interest, should not the editors have offered suggestions for correlation or integration of the material?

IDA T. JACOBS

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INTRODUCTION TO SOCIAL SCIENCE FOR JUNIOR-COLLEGE STUDENTS.—Survey courses are not new; indeed the course on which the book under review¹ is based has been taught at Stephens College since 1924. During this time the course has been presented to several thousand Freshman women, and the textual materials have undergone seven revisions.

The scope of the course (and book) is suggested by the following major subdivisions: problems of wealth and social organization (consumers' problems, labor problems, money, marriage and divorce, crime, etc.), to which are given 160 pages; problems of population and race, given 122 pages; problems of social control (public opinion; the American constitutional system; democracy; problems of the federal executive, legislative, and judicial branches), discussed in 186 pages; international problems (peace or war), assigned 49 pages; and the place of the student in meeting problems of the future, treated in 23 pages.

The reviewer wonders somewhat at the allocation of page space both between major divisions and between chapters or topics. Only forty-nine pages are directly devoted to international problems, and a restricted number of problems are considered. Fascism and communism are dismissed in six pages, whereas two chapters of fifty-one pages are devoted to the negro.

The organization of the various chapters also leaves something to be desired. The authors have sought to stimulate interest and to promote extensive reading by including a large number of quotations, many of them several pages in length. While much of the quoted material is, admittedly, interesting, the transitions are difficult, and some duplication of content has resulted. A few of the chapters conclude with a summary, which provides a measure of unity. Most of the chapters present a number of questions for study, a list of important terms, and an annotated bibliography.

A careful reading of the book reveals a few instances where questions regarding the authors' interpretation or presentation might be raised: (1) Classifying the causes of unemployment as those "in which the fault lies with the worker" and "those that are due to the will of the employer" (p. 28) seems inadequate. (2) Has the National Labor Relations Board been pro-C.I.O.? (3) What college Freshman believes that banks hoard rather than invest the savings intrusted to them? (4) Does the President have a free hand in appointments to the cabinet and the foreign service?

HOWARD R. ANDERSON

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THREE CHEERS FOR SAFETY.—Probably nobody in the school field has been unaware of the growing interest in safety education during the last few months. A decisive effort is being made to eliminate curriculum lag in this area. Data

¹ Paul W. Paustian and J. John Oppenheimer, *Problems of Modern Society: An Introduction to the Social Sciences*. New York: McGraw-Hill Book Co., Inc., 1938. Pp. xii+572. \$3.00.

concerning accidents in this country—and preventable accidents at that—are abundant and impressive. When the problem of what can be done about the situation is faced, the general conclusion seems to be that, not by precept and law, but by education and the creation of a right spirit, will the situation be improved. Of course, when education is mentioned, most persons are inclined to think immediately of the schools. Such is the case with safety education. The schools are "it." Only a short time ago when the schools were asked to do something about safety education, the plea was entered that no materials existed for instructional purposes. This situation is rapidly changing. Furthermore, most of the materials which are appearing are excellent for school use, as is illustrated by three recently published books on safety. These are part of a growing array of safety materials—books, tests, institutes, summer-session courses, mechanical-testing devices, roadside posting, etc.—intended to make our people safety-conscious and to produce a younger generation safety-trained.

Two of these books, that written by Welday¹ and that published by the American Automobile Association,² are concerned altogether with the problem of automobile driving and safety. The third, by Dull,³ includes automobile safety but reaches out to include also safety in and about the home, in the factory and on the farm, in the school and at play.

The book published by the American Automobile Association is a compilation of five bulletins previously issued by the association under the title "Sportsmanlike Driving Series." The sections are entitled "The Driver," "Driver and Pedestrian Responsibilities," "Sound Driving Practices," "Society's Responsibilities," and "How To Drive." Each of the five units of the book has seven separate chapters, and at the end of each chapter are discussion topics, special projects, and suggestions for further reading. The nearly five hundred pages in the book contain a wealth of excellent material, but, because there is no general table of contents for the book and because the pages in each section are separately numbered, the readiness of that information is much diminished.

The books by Welday and by Dull are about half the size of the American Automobile Association book. Each contains fourteen chapters, and both have bibliographies. At the close of his book Welday appends a "Study Guide," in which the materials of the book are encompassed in fifty-six lessons. Dull appends a glossary to his book and closes each chapter with questions for thought and review. As was indicated previously, Welday is concerned with the automobile field. The following are samples of the chapter headings: "X ray of an Automobile," "Care and Feeding," "The Psychology of Driving," "Customs and Rules of the Highway," and "Automobile Accidents." Dull covers more

¹ Roy A. Welday, *Your Automobile and You*. New York: Henry Holt & Co., 1938. Pp. xiv+252. \$0.88.

² *Sportsmanlike Driving*. Washington: American Automobile Association, 1938.

³ Charles E. Dull, *Safety First—and Last*. New York: Henry Holt & Co., 1938. Pp. viii+242+xxii. \$1.20.

territory in his book, as is shown in such chapter headings as "The Safe Driver: What He Does," "Safety for Pedestrians," "Learning To Drive," "Safety in and about the Home," "Fire and Fire Prevention," "Safety in the Factory and on the Farm," and "Accidents Can Be Checked."

It should be said of all three of these books that the materials are well organized and that special effort seems to have been made to keep them non-technical. If technical subjects, such as "X ray of an Automobile" (Welday), "What Makes a Car Go" (Dull), and "How the Automobile Runs" (American Automobile Association), are discussed, the treatments are given in a nontechnical fashion and are studded with such effective diagrams and other illustrative material that even the most untrained person can understand them. Indeed, all three books should be commended for the brevity, the clarity, and the "to-the-pointness" of their materials. All approach the problem of automobile safety from the standpoint of the driver, and all emphasize the importance of right beginnings through proper training. Some textbook-writers in other fields might profit by an examination of these books insofar as adaptation and appeal to secondary-school pupils are concerned. All three books are good in their field, although the American Automobile Association book should undergo some mechanical revisions if it is to be of maximum usefulness.

P. ROY BRAMMELL

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CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

- BUTTERWECK, JOSEPH S., and MUZZEY, GEORGE A. *A Handbook for Teachers: An Integrating Course for Classroom Teachers in Secondary Schools*. New York: E. P. Dutton & Co., Inc., 1939. Pp. xx+218. \$2.25.
- GRACE, A. G., and MOE, G. A. *State Aid and School Costs*. The Regents' Inquiry into the Character and Cost of Public Education in the State of New York. New York: McGraw-Hill Book Co., Inc., 1939. Pp. xvi+400. \$3.50.
- HORN, JOHN LOUIS. *The Education of Your Child*. Stanford University, California: Stanford University Press, 1939. Pp. xvi+208. \$3.00.
- MELVIN, A. GORDON. *Activated Curriculum: A Method and a Model for Class Teachers and Curriculum Committees*. New York: John Day Co., 1939. Pp. x+214. \$2.40.
- NORTON, THOMAS L. *Education for Work*. The Regents' Inquiry into the Character and Cost of Public Education in the State of New York. New York: McGraw-Hill Book Co., Inc., 1939. Pp. xviii+264. \$2.75.
- SWIFT, FLETCHER HARPER. *The Financing of Institutions of Public Instruction in Germany, 1927-1937*. European Policies of Financing Public Educational In-

- stitutions, Vol. IV. University of California Publications in Education, Vol. VIII, No. 4. Berkeley, California: University of California Press, 1939. Pp. xviii+(345-694). \$3.00.
- VIEG, JOHN ALBERT. *The Government of Education in Metropolitan Chicago*. Chicago: University of Chicago Press, 1939. Pp. xviii+274. \$2.50.
- WITTY, PAUL A., and SKINNER, CHARLES E. (Editors), and OTHERS. *Mental Hygiene in Modern Education*. New York: Farrar & Rinehart, Inc., 1939. Pp. x+540. \$2.75.

BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

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